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# PROCEEDINGS

OF THE

# American Medico-Psychological Association

AT THE

## SIXTY-FIFTH ANNUAL MEETING

HELD IN

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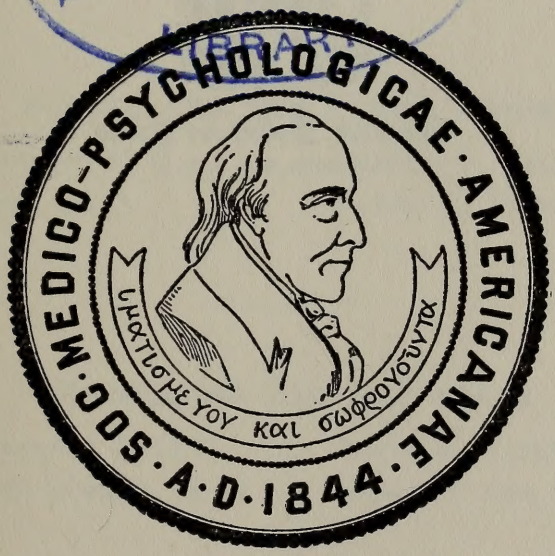


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1909-1910

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**Stearns, Wm. G., M. D.,** Chicago, Ill.

**Stedman, Henry R., M. D.,** Bournewood Private Hospital for Nervous and Mental Diseases, South St., Brookline, Mass.

**Stevens, Frank T., M. D.,** Assistant Physician Mt. Pleasant State Hospital, Mt. Pleasant, Ia.

**Stewart, Nolan, M. D.,** Assistant Physician State Insane Hospital, Asylum, Miss.

**Stick, H. Louis, M. D.,** Assistant Physician Worcester Insane Asylum, Worcester, Mass.

**Stockton, Geo., M. D.,** Superintendent Columbus State Hospital, Columbus, Ohio.

**Stone, Elmer E., M. D.,** Superintendent Napa State Hospital, Napa, Cal.

**Stone, William A., M. D.,** Assistant Superintendent Michigan Asylum for the Insane, Kalamazoo, Mich.

**Sweeney, Arthur, M. D.,** Professor of Medical Jurisprudence University of Minnesota; Neurologist to St. Joseph's, St. Luke's, and City and County Hospital, St. Paul, Minn.

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**Sylvester, William E., M. D.,** Member New York State Board of Alienists, Room 2094, 1 Madison Ave., New York, N. Y.

## T

**Taddiken, Paul Gerald, M. D.,** Second Assistant Physician Long Island State Hospital, Brooklyn, N. Y. (*Associate.*)

**Tamburini, A., M. D.,** Reggio-Emilia, Italy. (*Honorary.*)

**Taylor, Isaac M., M. D.,** Physician-in-Charge Broad Oaks Sanatorium, Morganton, N. C.

**Taylor, Walter A., M. D.,** Assistant Physician New Jersey State Hospital, Trenton, N. J. (*Associate.*)

* Deceased.

**Thompson, Charles E., M. D.,** Superintendent State Colony for the Insane, Gardner, Mass.

**Thompson, J. L., M. D.,** Assistant Physician State Hospital for the Insane, Columbia, S. C. (*Associate.*)

**Thompson, Whitefield N., M. D.,** Medical Superintendent The Hartford Retreat, Hartford, Conn.

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**Toulouse, Edouard, M. D.,** Physician-in-Chief to Villejuif Asylum; Director Revue de Psychiatrie; Director of Laboratory of Experimental Psychology, l'École des Hautes Etudes, Paris; Villejuif (Seine), France. (*Honorary.*)

**Townsend, Theodore Irving, M. D.,** First Assistant Physician, Dannemora State Hospital.

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## U

**Uhls, L. L., M. D.,** Superintendent Osawatomie State Hospital, Osawatomie, Kansas.

**Urquhart, Alexander R., M. D., F. R. C. P. E.,** Superintendent Royal Asylum, Perth, Scotland. (*Honorary.*)

**Upson, Henry S., M. D.,** Professor of Neurology Lakeside Hospital, Cleveland, Ohio.

## V

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## W

**Wade, J. Percy, M. D.,** Medical Superintendent Maryland Hospital for the Insane, Catonsville, Md.

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**Walker, Irving Lee, M. D.,** Assistant Physician Rochester State Hospital, Rochester, N. Y. (*Associate.*)

**Walker, Lewis M., M. D.,** Assistant Physician Medfield Insane Asylum, Harding, Mass. (*Associate.*)

**Wallace, D. R., M. D.,** Waco, Tex. (*Honorary.*)

**Ward, John W., M. D.** (formerly Medical Director New Jersey State Hospital), Trenton, N. J.

**Weeks, Henry M., M. D.,** Superintendent Eastern Pennsylvania State Institution for the Feeble-Minded and Epileptic, Spring City, Pa.

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**West, Calvin B., M. D.,** Assistant Physician Central Islip State Hospital, Central Islip, L. I., N. Y. (*Associate.*)

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**Whitaker, J. N., M. D.,** Assistant Physician State Sanitarium, Milledgeville, Ga. (*Associate.*)

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**White, M. J., M. D.,** Medical Superintendent Milwaukee Hospital for the Insane, Wauwatosa, Wis.

**White, Whitman V., M. D.,** Consulting Physician Manhattan State Hospital, Park Ave. Hotel, 33d Street, New York, N. Y.

**White, Wm. A., M. D.,** Superintendent Government Hospital for the Insane, Washington, D. C.

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**Williams, G. H., M. D.,** Assistant Physician Columbus State Hospital, Columbus, Ohio. (*Associate.*)

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## Y

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**Youngling, George S., M. D.,** Consulting Physician Central Islip State Hospital, 453 West 34th Street, New York City.

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| Associate Members | 134 |
| Honorary Members | 24 |
| Total | 497 |

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**Isaac Ray, M. D.**, Providence, R. I.....1855-1859
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**Peter M. Wise, M. D.**, New York, N. Y.....1900-1901
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**Charles G. Hill, M. D.**, Baltimore, Md.....1906-1907
**Charles P. Bancroft, M. D.**, Concord, N. H.....1907-1908
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**William F. Drewry, M. D.**, Petersburg, Va.....1909-1910

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**James T. Searcy, M. D.,** Superintendent.

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**Hubert Work, M. D.,** Founder, Proprietor and Superintendent.
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**J. Elvin Courtney, M. D.,** Denver.
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**Arthur B. Coleburn, M. D.,** Assistant Physician.
**J. M. Keniston, M. D.,** Assistant Physician.

Stamford Hall, Stamford.
**Amos J. Givens,** Superintendent.

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**Allen Ross Diefendorf, M. D.,** 42 Elm St., New Haven.
**George H. Knight, M. D.,** Lakeville.
**Frederick D. Ruland, M. D.,** Westport.
**Edwin Everett Smith, M. D.,** Kensett, South Wilton.

## D

**DELAWARE**—Delaware State Hospital, Farnhurst.
**W. H. Hancker, M. D.,** Superintendent.

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---

**Wm. L. Robins, M. D.,** 1700 13th St., N. W., Washington.
**J. C. Simpson, M. D.,** 1421 Massachusetts Ave., N. W., Washington.

* Deceased.

## F

**FLORIDA**—Asylum for Indigent Insane, Chattahoochee.
No members.

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**James H. Randolph, M. D.,** Assistant Physician.

## G

**GEORGIA**—State Sanitarium, Milledgeville.
**L. M. Jones, M. D.,** Superintendent.
**Edward M. Green, M. D.,** Assistant Physician.
**J. N. Whitaker, M. D.,** Assistant Physician.

---

**W. Herbert Adams, M. D.,** 102 Liberty St., East, Savannah.
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## I

**IDAHO**—Idaho Northern Insane Asylum, Orofino.
**John W. Givens, M. D.,** Superintendent.

**ILLINOIS**—Anna State Hospital, Anna.

Elgin State Hospital, Elgin.

Jacksonville State Hospital, Jacksonville.
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Kankakee State Hospital, Kankakee.
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Northern Indiana Hospital for the Insane, Longcliff, Logansport.
No members.

Southern Indiana Hospital for the Insane, Evansville.
**Charles E. Laughlin, M. D.,** Superintendent.

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**Charles F. Applegate, M. D.,** Superintendent.
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**Gershom H. Hill, M. D.,** Superintendent "The Retreat," Des Moines.
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## K

**KANSAS**—Osawatomie State Hospital, Osawatomie.
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Central Kentucky Asylum for the Insane, Lakeland.
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---

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## L

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* Deceased.

## M

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**P. H. S. Vaughan, M. D.,** 756 Congress St., Portland.

**MARYLAND**—Mount Hope Retreat, Baltimore.
**Charles G. Hill, M. D.,** Attending Physician.

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**George F. Inch, M. D.,** Assistant Physician.

EASTERN MICHIGAN ASYLUM, PONTIAC.
**E. A. Christian, M. D.,** Superintendent.
**Edward C. Green, M. D.,** Assistant Physician.

NORTHERN MICHIGAN ASYLUM, TRAVERSE CITY.
**James D. Munson, M. D.,** Superintendent.

STATE ASYLUM, IONIA.
**Oscar R. Long, M. D.,** Superintendent.

UPPER PENINSULA HOSPITAL FOR THE INSANE, NEWBERRY.
**Earl H. Campbell, M. D.,** Superintendent.

ST. JOSEPH'S RETREAT, DEARBORN.
**J. E. Emerson, M. D.,** Attending Physician.

OAK GROVE HOSPITAL, FLINT.
**C. B. Burr, M. D.,** Medical Director.
**Homer E. Clarke, M. D.,** Assistant Medical Director.
**Charles B. MacArtney, M. D.,** Assistant Physician.

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**Albert M. Barrett, M. D.,** Ann Arbor.
**Charles W. Hitchcock, M. D.,** 270 Woodward Ave., Detroit.
**George M. Kline, M. D.,** Ann Arbor.
**Walter P. Manton, M. D.,** 32 Adams Ave., West Detroit.

**MINNESOTA**—ST. PETER STATE HOSPITAL, ST. PETER.
**H. A. Tomlinson, M. D.,** Superintendent.
**W. H. Darling, M. D.,** Assistant Physician (at present in Europe.)

ROCHESTER STATE HOSPITAL, Rochester.
**Arthur F. Kilbourne, M. D.,** Superintendent.

SCHOOL FOR FEEBLE-MINDED AND COLONY FOR EPILEPTICS, FARIBAULT.
**Arthur C. Rogers, M. D.,** Superintendent.

FERGUS FALLS STATE HOSPITAL, FERGUS FALLS.
**G. O. Welch, M. D.,** Superintendent.
**Franklin S. Wilcox, M. D.,** First Assistant Physician.

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**C. Eugene Riggs, M. D.,** St. Paul.
**Arthur Sweeney, M. D.,** St. Paul.

**MISSISSIPPI**—STATE INSANE HOSPITAL, ASYLUM P. O.
**Thomas J. Mitchell, M. D.,** Superintendent.
**Nolan Stewart, M. D.,** Assistant Physician.

EAST MISSISSIPPI INSANE HOSPITAL, MERIDIAN.
**J. M. Buchanan, M. D.,** Superintendent.

**MISSOURI**—St. Vincent Institution for the Insane, St. Louis.

State Hospital No. 1, Fulton.
No members.

State Hospital No. 2, St. Joseph.
**William F. Kuhn, M. D.,** Superintendent.

State Hospital No. 3, Nevada.
No members.

State Hospital No. 4, Farmington.
No members.

Colony for Feeble-Minded and Epileptic, Marshall.
No members.

City Asylum, St. Louis.
**Henry S. Atkins, M. D.,** Superintendent.

Dr. C. R. Woodson's Sanitarium, St. Joseph.
**C. R. Woodson, M. D.,** Physician-in-Charge.

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**L. H. Callaway, M. D.,** 525 West Arch St., Nevada.
**Charles G. Chaddock, M. D.,** 3750 Lindell Boulevard, St. Louis.
**George C. Crandall, M. D.,** 4287 Oive St., St. Louis.
**Frank R. Fry, M. D.,** Humboldt Building, St. Louis.
**Charles H. Hughes, M. D.,** 3872 Washington Boulevard, St. Louis.
**Frank L. Keith, M. D.,** Flat River.
**John Punton, M. D.,** Kansas City.
**J. F. Robinson, M. D.,** Nevada.

**MONTANA**—Montana State Hospital, Warm Springs.
**J. M. Scanland, M. D.,** Superintendent.

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**Samuel F. Orton, M. D.,** Anaconda.

## N

**NEBRASKA**—Nebraska Hospital for Insane, Lincoln.

Nebraska State Hospital, Ingleside.

Norfolk Hospital for the Insane, Norfolk.
No members.

**NEVADA**—Nevada Hospital for Mental Diseases, Reno.
No members.

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**George B. Landers, M. D.,** Assistant Physician.

Highland Spring Sanatorium, Nashua.
**Albert Edward Brownrigg,** Superintendent.

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**B. D. Evans, M. D.**, Medical Director.
**Peter S. Mallon, M. D.**, Assistant Physician.
**E. Moore Fisher, M. D.**, Assistant Physician.
**Alexander J. Carroll, M. D.**, Assistant Physician.

New Jersey State Hospital, Trenton.
**Henry A. Cotton, M. D.**, Medical Director.
**John C. Felty, M. D.**, Assistant Physician.
**William C. Sandy, M. D.**, Assistant Physician.
**Walter A. Taylor, M. D.**, Assistant Physician.
**Edgar B. Funkhouser, M. D.**, Second Assistant Physician.
**Frederick S. Hammond, M. D.**, Assistant Physician and Pathologist.

New Jersey State Village for Epileptics, Skillman.
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Fair Oaks Sanatorium, Summit.
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**D. M. Dill, M. D.**, South Orange Ave., Newark.
**L. S. Hinckley, M. D.**, Newark.
**Daniel T. Millspaugh, M. D.**, 47 Totowa Ave., Paterson.
**John W. Ward, M. D.**, Trenton.

**NEW YORK**—Bloomingdale Asylum, White Plains.
**Samuel B. Lyon**, Superintendent.
**August Hoch, M. D.**, First Assistant Physician.
**Albert Durham**, Assistant Physician.

Manhattan State Hospital, Ward's Island, New York City.
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**Louis C. Pettit, M. D.**, Second Assistant Physician.
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**Clarence F. Haviland, M. D.**, Assistant Physician.
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**Morris J. Karpas, M. D.**, Assistant Physician.

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**James F. Munson, M. D.,** Assistant Physician and Pathologist.
**G. Kirby Collier,** Assistant Physician.

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**George F. M. Bond, M. D.,** 960 North Broadway, Yonkers.
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**George B. Campbell, M. D.,** 78 Irving Place, New York.
**L. Pierce Clark, M. D.,** 23 West 58th St., New York.
**H. Austin Cossitt, M. D.,** 146 W. 70th St., New York City.
**Albert Warren Ferris, M. D.,** 114 West 69th St., New York City.
**Austin Flint, M. D.,** 118 East 19th St., New York.
**Menas S. Gregory, M. D.,** Resident Alienist, Bellevue Hospital.
**Graeme M. Hammond, M. D.,** 60 West 56th St., New York.
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## O

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**G. H. Williams, M. D.,** Assistant Physician.

Athens State Hospital, Athens.
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**John D. O'Brien,** Assistant Physician.
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GALLOPOLIS HOSPITAL FOR EPILEPTICS, GALLOPOLIS.
**William Pritchard, M. D.,** Superintendent.

OXFORD RETREAT, OXFORD.
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**R. Harvey Cook, M. D.,** Assistant Physician.

CINCINNATI SANITARIUM, COLLEGE HILL.
**Berthold A. Williams, M. D.,** Senior Resident Physician.
**Charles B. Rogers, M. D.**

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**George T. Harding, M. D.,** 78 South 3d St., Columbus.
**A. B. Howard, M. D.,** 736 Rose Building, Cleveland.
**F. W. Langdon, M. D.,** 5 Garfield Place, Cincinnati.
**J. M. Lewis, M. D.,** Cleveland.
**J. M. Ratliff, M. D.,** Dayton.
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**Henry Waldo Coe, M. D.,** Medical Director Crystal Springs, Portland.
**Robert L. Gillespie, M. D.,** Medical Director Crystal Springs, Portland.

## P

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**A. R. Moulton, M. D.,** Senior Assistant Physician.

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**PENNSYLVANIA**—*Continued.*

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**W. W. Hawke, M. D.,** Chief Resident Physician.

STATE HOSPITAL FOR THE INSANE, NORRISTOWN.
**Mary Moore Wolfe, M. D.,** Resident Physician Department for Women.
**William W. Richardson, M. D.,** Resident Physician, Department for Men.
**Clyde R. McKinnis, M. D.,** Assistant Physician.

WESTERN PENNSYLVANIA INSTITUTE FOR FEEBLE-MINDED, POLK.
**J. Morehead Murdock, M. D.,** Superintendent.

PENNSYLVANIA STATE HOSPITAL, HARRISBURG.
**H. L. Orth, M. D.,** Superintendent.

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**Morris S. Guth, M. D.,** Superintendent.
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**Hugh B. Meredith, M. D.,** Superintendent.

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PENNSYLVANIA EPILEPTIC HOSPITAL AND COLONY FARM, OAKBOURNE.
No members.

PENNSYLVANIA TRAINING SCHOOL FOR FEEBLE-MINDED, ELWYN.
No members.

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HOSPITAL FOR THE INSANE OF LUZERNE COUNTY, RETREAT.
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**Jane Rogers Baker, M. D.,** Superintendent.

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**C. Spencer Kinney, M. D.,** Proprietor.
**Edward A. Everett, M. D.,** Assistant Physician.

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**D. J. McCarthy,** Philadelphia.
**Charles K. Mills,** 1909 Chestnut St., Philadelphia.
**J. Nicholas Mitchell, M. D.,** 1505 Spruce St., Philadelphia.
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No members.

## R

**RHODE ISLAND**—Butler Hospital, Providence.
**G. Alder Blumer, M. D.,** Superintendent.
**Henry C. Hall, M. D.,** Assistant Physician.
**William McDonald, M. D.,** Assistant Physician.

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**Arthur H. Harrington, M. D.,** Superintendent.

Rhode Island State Sanatorium, Wallum Lake.
**H. L. Barnes, M. D.,** Superintendent.

## S

**SOUTH CAROLINA**—State Hospital for the Insane, Columbia.
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**J. L. Thompson, M. D.,** Assistant Physician.

**SOUTH DAKOTA**—South Dakota Hospital for the Insane, Yankton.
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**George Sheldon Adams, M. D.,** Assistant Superintendent.

## T

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**Albert E. Douglas, M. D.,** Assistant Physician.

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**G. H. Moody, M. D.**, San Antonio.
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## U

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## V

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Southwestern State Hospital, Marion.

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## W

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Milwaukee Hospital for the Insane, Wauwatosa.
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Milwaukee Sanitarium, Wauwatosa.
**Richard Dewey, M. D.,** Physician-in-Charge.

Palmyra Sanitarium, Palmyra.
**Howard C. Searle, M. D.,** Superintendent.

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**William F. Becker, M. D.,** 604 Goldsmith Bldg., Milwaukee.
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**John B. Edwards, M. D.,** Mauston.
**Uranus O. B. Wingate, M. D.,** Milwaukee.

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**George L. Sinclair, M. D.,** Provincial Inspector of Hospitals and Asylums, 25 Tobin St., Halifax, N. S.

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**W. M. English, M. D.,** Medical Superintendent.

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Homewood Sanitarium, Guelph.
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**Eugene C. McNicholl,** Cobourg.
**Donald Campbell Meyers, M. D.,** Deer Park, Toronto.

**PRINCE EDWARD ISLAND**—Hospital for Insane, Charlottetown.
**V. L. Goodwill, M. D.,** Medical Superintendent.

**QUEBEC**—Protestant Hospital for the Insane, Montreal.
**T. J. W. Burgess, M. D.,** Superintendent.
**Carlyle A. Porteous, M. D.,** Assistant Superintendent.
**Andrew Macphail, M. D.,** Consulting Pathologist.

Saint Jean de Dieu Hospital for the Insane, Gamelin.
**George Villeneuve, M. D.,** Superintendent.

Beauport Asylum for the Insane, Quebec Co.
**M. D. Brochu, M. D.,** Superintendent.

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**E. Philippe Chagnon, M. D.,** Montreal.
**David Alexander Shirres, M. D.,** 670 Sherbrooke St., West, Montreal.

**BAHAMA ISLANDS.**

**F. A. Mackintosh, M. D.,** Ingua, B. W. I.

# AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION.

## CONSTITUTION.

### Article I.

This organization shall be known as the American Medico-Psychological Association, this name being adopted in 1892 by "The Association of Medical Superintendents of American Institutions for the Insane," founded in 1844.

### Article II.

The object of this Association shall be the study of all subjects pertaining to mental disease, including the care, treatment, and promotion of the best interests of the insane.

### Article III.

There shall be four classes of members: (1) Active members, who shall be physicians, resident in the United States and British America, especially interested in the treatment of insanity; (2) Associate members; (3) Honorary members; and (4) Corresponding members.

### Article IV.

The officers of the Association shall consist of a President, Vice-President, Secretary—who shall also be the Treasurer—three Auditors, and twelve other members of the Association to be called Councilors; all of these officers together shall constitute a body which shall be known as the Council.

Note.—The Association of Medical Superintendents of American Institutions for the Insane was founded in 1844 by the original thirteen members. In 1891, when its membership had increased to more than two hundred, it was proposed, at the annual meeting of that year in Washington, to form a better organization of the Association—its work having previously been done under the somewhat unstable rules of custom and a few resolutions scattered through its records. The proposition was agreed to, and at the annual meeting in Washington, in 1892 there was unanimously adopted the following Constitution and By-Laws, with the change of name to the American Medico-Psychological Association.

## Article V.

The Active members of the Association shall include all past and present medical superintendents named in the official list published for 1892 of members of "The Association of Medical Superintendents of American Institutions for the Insane"; the Honorary members shall include those so designated in that list; the Associate members shall include all the assistant physicians named in the same list; it being provided that said list shall be corrected by the Council, as may be necessary to carry out the intention of the Constitution as to the continuance of existing membership.

Every candidate for admission to the Association hereafter as an Active member shall be proposed to the Council, in writing, in an application addressed to the President, at any annual meeting preceding the one at which the election is held. Honorary, Associate, or Corresponding members shall be proposed to the Council, in writing, in an application addressed to the President, at least two months prior to the meeting of the Association. Every application of whatever class must include a statement of the candidate's name and residence, professional qualifications, and any appointments then or formerly held, and certifying that he is a fit and proper person for membership. In the case of a candidate for Active or Associate membership, the application shall be signed by three Active members of the Association; and by six Active members for the proposal of an Honorary or Corresponding member. The names of all candidates approved by a majority vote of members of the Council present at its annual meeting shall be presented on a written or printed ballot to the Association at its concurrent annual meeting, at least one session previous to that at which the election is made, which shall be by ballot at a regular session, and require a majority vote of the members present. Physicians who, by their professional work or published writings, have shown a special interest in the care and welfare of the insane, are eligible to Active membership. The only persons eligible for Associate membership are regularly appointed assistant physicians of institutions for the insane that are regarded to be properly such by the Council; and they are eligible for such membership only during the time they are hold-

ing such appointments. After holding such an appointment three years, an Associate member may become an Active member by making application, in writing, to the Council, and upon its approval, being elected in the manner heretofore prescribed.

## Article VI.

Physicians and others who have distinguished themselves by their attainments in branches of science connected with insanity, or who have rendered signal service in philanthropic efforts to promote the interests of the insane, shall be eligible for Honorary membership.

Physicians not residents in the United States and British America, who are actively engaged in the treatment of insanity, may be elected Corresponding members.

Active members only shall be entitled to a vote at any meeting, or be eligible to any office. Honorary and Corresponding members shall be exempt from all payments to the Association.

## Article VII.

Any member of the Association may withdraw from it on signifying his desire to do so in writing to the Secretary: *Provided,* That he shall have paid all his dues to the Association. Any member who shall fail for three successive years to pay his dues after special notice by the Treasurer shall be regarded as having resigned his membership, unless such dues shall have been remitted by the Council for good and sufficient reasons.

And member who shall be declared unfit for membership by a two-thirds vote of the members of the Council present at an annual meeting of that body shall have his name presented by it for the action of the Association from which he shall be dismissed if it be so voted by two-thirds of the members present at its annual meeting.

## Article VIII.

The Officers and Councilors shall be elected at each annual meeting. They shall be nominated to the Association on the second day of the annual meeting in the order of business of the first session of that day, by a committee appointed for that purpose by the President; and the election shall take place immedi-

ately. The election shall be made as the meeting may determine, and the person who shall have received the highest number of votes shall be declared elected to the office for which he has been nominated.

The President, Vice-President, the Secretary and Treasurer, and Auditors shall hold office for one year or until the beginning of the term for which their successors are elected. One Auditor shall be elected for one year, one for two years, and one for three years. The Secretary and Treasurer and one Auditor are eligible for re-election. At the first election of Councilors, four members shall be elected for one year, four for two years, and four for three years; and thereafter four members shall be elected each year to hold office three years, or until their successors are elected. The President, Vice-President, one Auditor, and the four retiring Councilors are ineligible for re-election to their respective offices for one year immediately following their retirement. All the Officers and Councilors shall enter upon their duties immediately after their election, excepting the President and Vice-President. When any vacancies occur in any of the offices of the Association, they shall be filled by the Council until the next annual meeting.

A quorum of the Council shall be formed by six members; and of the Association by twenty Active members.

## Article IX.

The President and Vice-President for the year shall enter on their duties at the close of the business of the annual meeting at which they are elected. The President shall prepare an inaugural address to be delivered at the opening session of the meeting. He shall preside at all the annual or special meetings of the Association or Council, or in his absence at any time, the Vice-President shall act in his place.

The Secretary and Treasurer shall keep the records of the Association and perform all the duties usually pertaining to that office, and such other duties as may be prescribed for him by the Council; and under the same authority he shall receive and disburse and duly account for all sums of money belonging to the Association. He shall keep accurate accounts and vouchers of all his receipts and payments on behalf of the Association, and of

all invested funds, with the income and disposition thereof, that may be placed in his keeping, and shall submit these accounts, with a financial report for the preceding year, to the Council at its annual meeting. Each annual statement shall be examined by the Auditors, who shall prepare and present at each annual meeting of the Association a report showing its financial condition. The Council shall have charge of any funds in the possession of the Association, and which shall be invested under its direction and control. The Council shall keep a careful record of its proceedings, and make an annual report to the Association of matters of general interest. The Council shall also print annually the proceedings of the meetings of the Association and the reports of the Treasurer and Auditors.

The Council is empowered to manage all the affairs of the Association, subject to the Constitution and By-Laws; to appoint committees from the membership of the Association, and spend money out of its surplus funds for special scientific investigations in matters pertaining to the objects of the Association, to publish reports of such scientific investigations; to apply the income of special funds, at its discretion, to the purposes for which they were intended. The Council may also engage in the regular publication of reports, papers, transactions, and other matters, in annual volume, or in a journal, in such manner and at such times as the Council may determine, with the approval of the Association.

## Article X.

Amendments to the Constitution and By-Laws shall be taken up for consideration at the first session of the second day of any annual meeting, and may be made by a two-thirds vote of all the members present: *Provided,* That notice of such proposed amendments be given in writing at the annual meeting next preceding. It shall be the duty of the Secretary to send to all the members a copy of any proposed amendment at least three months previous to the meeting when the action is to be taken.

# BY-LAWS.

## Article I.

The meetings of the Association shall be held annually. The time and place of each meeting shall be named by the Council, and reported to the Association for its action at the preceding meeting. Each annual meeting shall be called by printed announcements sent to each member at least three months previous to the meeting.

The Council shall hold an annual meeting concurrent with the annual meeting of the Association; and the Council shall hold as many sessions and at such times as the business of the Association may require.

Special meetings of the Council may be called by the order of the Council. The President shall have authority at any time, at his own discretion, to instruct the Secretary to call a special meeting of the Council; and he shall be required to do so upon a request signed by six members of the Council. Such special meetings shall be called by giving at least four weeks' written notice.

## Article II.

Each and every Active and Associate member shall pay an annual tax to the Treasurer, the amount to be fixed annually by the Council, not to exceed five dollars for an Active member, or two dollars for an Associate member.

## Article III.

The order of business of each annual meeting of the Association shall be determined by the Council, and shall be printed for the use of the Association at its meeting. The Council shall also make all arrangements for the meetings of the Association, appointing such auxiliary committees from its own body, or from other members of the Association, and making such other provisions as shall be requisite, at its discretion.

## NOTE.

The accompanying volume, containing the proceedings, papers, and discussions of the American Medico-Psychological Association at its Sixty-fifth Annual Meeting, is printed by the Council with the Approval of the Association.

CHARLES G. WAGNER,
*Secretary.*

POUGHKEEPSIE, N. Y.,
*October 1, 1909.*

# AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION.

## PROCEEDINGS OF THE SIXTY-FIFTH ANNUAL MEETING.

### Atlantic City, N. J., Tuesday, June 1, 1909.—First Session.

The Association convened at 10 a. m., in the Convention Hall of the Marlborough-Blenheim, Atlantic City, N. J., and was called to order by the President, Dr. Arthur F. Kilbourne, Rochester, Minnesota.

The President.—*Ladies and Gentlemen, members of the American Medico-Psychological Association:* I have the honor to call to order the Sixty-Fifth Annual Meeting of this Association, and I have the pleasure of introducing the Hon. Franklin P. Stoy, Mayor of Atlantic City, who will deliver the address of welcome, on behalf of this city. (Applause.)

Mayor Stoy.—*Mr. Chairman, Ladies and Gentlemen, members of the Association:* My mission this morning is a brief one. I assure you that I have not come here to discuss medicine or to do things otherwise to prolong my talk with you. I am here this morning to offer you a hearty welcome to our city on this most pleasant day. You represent in your organization not only our own country, but our sister country, and I offer you a hearty welcome to our city and extend to you the freedom thereof.

We have frequent gatherings here of learned societies, and I assure you it is a great pleasure for me at this time to say a welcome to you on behalf of our people. There is no doubt that you are here not only for mutual benefit, but you are here to spend with us a week of recreation.

We hope, therefore, that your stay here will be one of pleasure, one of contentment.

Now, Mr. President, that is about all that I can say in extending a welcome to you, but I trust that I shall have the pleasure of meeting individually many of your members before they leave our city, and I hope that I, at least, shall not be called upon to have any of your services rendered to me. I also hope during the time you are here that you will not want the services of any other fellow doctor. I thank you for your kind attention. (Applause.)

THE PRESIDENT.—We are honored this morning by the presence of one of New Jersey's native sons, and it is with the greatest pleasure that I introduce Hon. Joseph S. Frelinghuysen, President of the Senate of New Jersey, and I believe the next Governor. (Applause.)

SENATOR FRELINGHUYSEN.—*Mr. Chairman, members of the American Medico-Psychological Association, Ladies and Gentlemen:* I can pronounce that word "psychological" much better than I can spell it. It reminds me of the story of the old sailor who saw a boat on the coast named "Psyche," and said it was the darndest way to spell fish he ever saw. (Laughter.) I am also reminded of the story of the English learned physician who was lecturing to his class, and had that day received an appointment from the crown. After he had finished he wrote at the bottom of the blackboard: "I have this day been appointed physician to her majesty, the Queen of England." Some jocular student during the night wrote at the bottom, "God save the Queen." (Laughter.)

In the absence of Governor Fort, who cannot be present to-day, it becomes my pleasant duty to welcome you on behalf of the State of New Jersey. The hearty greeting extended by his honor, Mayor Stoy, the most cordial welcome, the usual hospitality and good will of Atlantic City which he has proffered you, leave very little for me to say. Dr. Evans has informed me of the purposes of your Association, and I may, therefore, say to you, who are the thinkers of the age upon this subject, that we consider your conclusions of vast importance to the State of New Jersey. New Jersey is deeply interested in your conferences, and we await with much interest the result of these deliberations which make for wider and better knowledge and treatment of diseases of the human mind.

In this State we want to take a progressive stand and each year improve and maintain the highest standards in all institutions. Our experts tell us we are putting in practice the newest methods of alleviating suffering in mental diseases which tend to the elimination so far as possible of insanity. We have, therefore, a large appreciation of the work of the American Medico-Psychological Association and its value for the world at large. The surgeon performing a great operation, or the doctor restoring to health some prominent citizen, is heralded far and wide for his skill, and justly so. They receive much public praise and great monetary reward, but many of you must do your work obscurely and alone to a great extent unheralded and unsung. You are serving the nation, however, in a much nobler way, and we who are called upon to pass upon the problems involved know it, appreciate it, and praise you for it.

I am glad to know that the members of our institutions in New Jersey are identified with this Association. New Jersey is no longer a small State in population, and as our responsibility increases with the greater number of dependents, we want those upon whom this responsibility falls to help advance the knowledge of improved methods.

In the next four days you will exchange opinions, indulge in research and study improved plans for treating these diseases. May the result of this conference be greatly increased knowledge that should redound not only to the good of the State of New Jersey, but the whole civilized world.

I have, therefore, crossed the State to-day to meet you and greet you and give you these few words of encouragement. I am not a scientist, I am simply a legislative agent, and in behalf of the State I want to assure you that we will stand shoulder to shoulder for the enactment of such reforms as will make for the amelioration of human suffering which is the greatest work for God and country. (Applause.)

In conclusion I have just this to say, that we hope that not only those from other States, but those from our sister countries, who have honored us with their presence, will have a pleasant sojourn in our midst, and enjoy the refreshing breezes of the ocean front and return to your homes with good impressions of New Jersey. (Applause.)

The President.—It is a matter of regret that the gentlemen who have just addressed us could not wait to receive some acknowledgment of their remarks. However, we appreciate their kind and courteous welcome.

Dr. Macdonald.—I move that a vote of thanks of the Association be extended to both of the distinguished gentlemen who have just addressed us.

This motion was duly seconded and carried by rising vote.

The President.—At the request of the Chairman of the Committee of Arrangements the report of that Committee will be postponed. The Secretary will now read the report of the Council.

### Report of the Council to the American Medico-Psychological Association.

Atlantic City, June 1, 1909.

The Council met on the evening of May 31, 1909, in the Council Room of the Marlborough-Blenheim, Atlantic City, N. J.

The Council has received and transmits herewith the report of the Treasurer for the current year.

We also transmit herewith a statement of the membership of the Association to date.

The Council recommends for election to active membership the following named physicians:

Louis B. Baldwin, M. D., Jamestown, N. Dak.; Brooks F. Beebe, M. D., Cincinnati, Ohio; Walter Murray English, M. D., Hamilton, Ontario, Can.; Albert Warren Ferris, M. D., New York, N. Y.; L. M. Jones, M. D., Mil-

ledgeville, Ga.; George R. Love, M. D., Toledo, Ohio; D. J. McCarthy, M. D., Philadelphia, Pa.; J. Moorehead Murdock, M. D., Polk, Pa.; W. J. Robinson, M. D., London, Ontario, Can.; Max G. Schlapp, M. D., New York, N. Y.; C. Howard Searle, M. D., Palmyra, Wis.; Elmer E. Stone, M. D., Napa, Cal.; L. L. Uhls, M. D., Osawatomie, Kan.; Henry S. Upson, M. D., Cleveland, Ohio; William Rushmore White, M. D., Ellicott City, Md.; J. M. Scanland, M. D., Warm Springs, Mont.

The Council recommends the transfer of the following named associate members to the active class:

Dana F. Downing, M. D., West Newton, Mass.; Thomas P. Prout, M. D., Summit, N. J.

The Council recommends that the following named physicians be elected to associate membership:

Earl D. Bond, M. D., Waverley, Mass.; Arthur J. Capron, M. D., Kings Park, N. Y.; Alexander J. Carroll, M. D., Morris Plains, N. J.; William J. Cavanaugh, M. D., Poughkeepsie, N. Y.; G. Kirby Collier, M. D., Sonyea, N. Y.; Blanche Dennes, M. D., Poughkeepsie, N. Y.; Edward Gillespie, M. D., Binghamton, N. Y.; Edward C. Greene, M. D., Pontiac, Mich.; Charles Gibson McGaffin, M. D., Taunton, Mass.; Mortimer W. Raynor, M. D., Poughkeepsie, N. Y.; A. J. Rosanoff, M. D., Kings Park, N. Y.; Edward B. Shellenberger, M. D., Warren, Pa.; Farrest C. Tyson, M. D., Bangor, Me.

The changes in the membership of the American Medico-Psychological Association during the past year are as follows:

### Honorary Members.

| | | |
|---|---|---|
| Former number | | 24 |
| Admitted | 1 | |
| Died | 1 | |
| Net gain | — 0 | |
| Present number | | 24 |

### Active Members.

| | | |
|---|---|---|
| Former number | | 300 |
| Associate to active | 4 | |
| Admitted | 17 | |
| | —21 | |
| Resigned | 7 | |
| Died | 5 | |
| | —12 | |
| Net gain | — | 9 |
| Present number | | 309 |

ASSOCIATE MEMBERS.

| | | |
|---|---|---|
| Former number | | 125 |
| Admitted | 12 | |
| | —12 | |
| Associate to active | 4 | |
| Resigned | 5 | |
| Died | 1 | |
| | —10 | |
| Net gain | — | 2 |
| Present number | | 127 |
| Total membership June 1, 1909 | | 460 |

The Council transmits herewith a letter from Dr. W. H. Carmalt, Secretary of the Congress of American Physicians and Surgeons.

Respectfully submitted,

CHARLES W. PILGRIM, *Secretary.*

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

SECRETARY'S OFFICE, 87 ELM ST., NEW HAVEN, May 20, 1909.

*Dr. Charles W. Pilgrim, Secretary of American Medico-Psychological Association.*

MY DEAR DOCTOR.—The program for the Congress of 1910, so far as it affects the Component Associations, has been arranged as follows, viz.:

First. The Congress will be held on May 3 and 4, 1910.

Second. There will be a general session of the Congress on the afternoon of Tuesday, May 3, from 2.30 to 5 o'clock, during which time no sessions of the Component Associations will be held.

Third. The subject of "Artificial Immunization" will be considered at that time, the speakers being, as usual, selected by the committee on the program.

Fourth. *The Component Associations are requested to consider at their several meetings on Wednesday afternoon, May 4, the second day of the Congress, the cognate subject of "Vaccine Therapy," each from its own point of view, by writers selected by the Association itself, the papers to be published as a part of the Transactions of the Congress.* It is understood that if two (or more) Associations wish to unite in a discussion, they are at liberty to do so. You will, therefore, kindly bring this to the notice of your Association at its next meeting, or otherwise, according as your Association is constituted, and have the writers appointed as mentioned, notifying me as soon as possible in order that I may get out the preliminary program of the Congress without delay.

I am very truly yours,

W. H. CARMALT.

On motion, which was duly seconded, the report of the Council was accepted and adopted. The names of physicians proposed for election to come up to-morrow in regular course.

THE PRESIDENT.—We will now hear the report of the Treasurer.

TREASURER'S REPORT, 1908-1909.

DEBITS.

| | | |
|---|---|---|
| Balance on hand | $1,920.41 | |
| Dues from active members | 1,807.45 | |
| Dues from associate members | 275.00 | |
| Interest on bank deposits | 64.14 | |
| Blackburn autopsies | 1.00 | |
| Gummed lists of members | 15.50 | |
| | | $4,083.50 |

CREDITS.

| | | | |
|---|---|---|---|
| Printing and publishing transactions 1907 | | $629.54 | |
| Distributing transactions | | 66.00 | |
| Printing and distributing lists of members | | 32.20 | |
| Additional reprints | $61.87 | | |
| Expressage on same | 14.36 | | |
| | | 76.23 | |
| Stenographer's services (Cincinnati) | | 58.00 | |
| Stenographer's expenses (Cincinnati) | | 69.84 | |
| Clerical services (June, 1907, to May, 1909) | | 120.00 | |
| Rubber stamps | | 1.35 | |
| Exchange on foreign checks (N. Y. Prod. Bank) | | .30 | |
| Appropriation, AMERICAN JOURNAL OF INSANITY | | 150.00 | |
| Envelopes and letter heads | | 36.99 | |
| Registration cards | | 4.50 | |
| Circular letters | | 5.50 | |
| Applications for membership | | 6.75 | |
| Expressage on printing | | 2.40 | |
| Programs (1908) | | 13.75 | |
| Preliminary programs (1909) | | 3.50 | |
| Expenses of J. R. Heilman to N. Y. City to confer with L. M. Farrington | | 2.32 | |
| Postage | | 76.20 | |
| Balance in Poughkeepsie Trust Company | | 1,207.15 | |
| Balance in Emigrant Industrial Savings Bank | | 1,520.98 | |
| | | | $4,083.50 |

Respectfully submitted,

CHAS. W. PILGRIM,

*Treasurer.*

On motion the report of the Treasurer was referred to the Auditing Committee.

THE PRESIDENT.—I will now call for the report of the editors of the AMERICAN JOURNAL OF INSANITY.

*Mr. President and the members of the American Medico-Psychological Association:* There is little to say concerning the JOURNAL OF INSANITY that the majority of you do not know. The volume for the year has embraced a large number of valuable contributions to psychiatry upon a wide range of subjects. The complete volume comprises over eight hundred pages, and on account of an unusual number of illustrations, tables, charts, etc., the cost of printing has been in excess of the amount paid for the previous volume, but the income from subscriptions has been over three hundred dollars more, and from advertisements sixty dollars more.

The editors feel that it is again necessary to call the attention of the contributors of papers to our annual sessions to the rule that papers read at the meetings are the property of the Association and cannot be published elsewhere than in the JOURNAL and volume of transactions, except upon permission of the Council.

Obviously the editors cannot see all the papers published in all the journals in the country and when a manuscript is received from the author or the Secretary of the Association the editors should be in a position to feel that it has not already appeared in print.

It has been deemed best to postpone for further consideration the publication of the JOURNAL bi-monthly, and for many reasons it has been found impossible at present to send the JOURNAL to each member of the Association gratis.

If every member of the Association would place his name on the subscription list, and every responsible head of an institution the name of the institution, it will be possible to send the members of the Association the JOURNAL at a reduced price without additional cost to the treasury of the Association.

Respectfully submitted,
EDWARD N. BRUSH.

On motion the report was accepted and the vouchers referred to the Auditing Committee.

THE PRESIDENT.—I will now announce the Nominating Committee, which will consist of the following named members:

Dr. T. J. W. Burgess, Montreal, Quebec, Chairman; Dr. Joseph Clement Clark, Maryland; Dr. Wm. Mabon, New York.

I now declare a recess of fifteen minutes for the purpose of registration. Each member and visitor is earnestly requested to fill out one of the cards on the Secretary's table.

The following members registered and were in attendance during the whole or a part of the meeting:

Abbott, E. Stanley, M. D., Assistant-Physician, McLean Hospital, Waverley, Mass.

Adams, George S., M. D., Superintendent, Westboro Insane Hospital, Westboro, Mass.

Allen, Henry D., M. D., Superintendent, Allen's Invalid Home, Milledgeville, Ga.

Ashley, Maurice C., M. D., Superintendent, Middletown State Homeopathic Hospital, Middletown, N. Y.

Atkins, H. S., M. D., Superintendent, City Insane Asylum, St. Louis, Mo.

Babcock, J. W., M. D., Physician and Superintendent, State Hospital for the Insane, Columbia, S. C.

Ballantine, Eveline P., M. D., Woman Physician, Rochester State Hospital, Rochester, N. Y.

Barrett, Albert M., M. D., Director State Psychopathic Hospital at the University of Michigan, Ann Arbor, Mich.

Beutler, W. F., M. D., Superintendent, Asylum for Chronic Insane, Wauwatosa, Wis.

Biddle, Thomas C., M. D., Superintendent, Topeka State Hospital, Topeka, Kan.

Blumer, G. Alder, M. D., Medical Superintendent, Butler Hospital, Providence, R. I.

Bond, George F. M., M. D., Owner and Physician-in-Charge, Dr. Bond's House, 960 North Broadway, Yonkers, N. Y.

Bradley, Isabel A., M. D., Assistant-Physician, Friends' Asylum for the Insane, Frankford, Philadelphia, Pa.

Brunk, Oliver C., M. D., Superintendent, Eastern State Hospital, Williamsburg, Va.

Brush, Edward N., M. D., Physician-in-Chief and Superintendent, Sheppard and Enoch Pratt Hospital, Towson (Station A, Baltimore), Md.

Burgess, T. J. W., M. D., Medical Superintendent, Protestant Hospital for the Insane, Box 2562, Montreal, Quebec.

Burr, C. B., M. D., Medical Director, "Oak Grove," Flint, Mich.

Calder, Daniel H., M. D., Superintendent, State Mental Hospital, Provo, Utah.

Carriel, H. B., M. D., Superintendent, Central Hospital for the Insane, Jacksonville, Ill.

Chapin, John B., M. D., Physician and Superintendent, Pennsylvania Hospital for the Insane, Philadelphia, Pa.

Chase, Robert H., M. D., Superintendent, Friends' Asylum for the Insane, Frankford, Philadelphia, Pa.

Clark, Charles H., M. D., Superintendent, Cleveland State Hospital, Cleveland, Ohio.

Clark, J. Clement, M. D., Superintendent, Springfield State Hospital, Sykesville, Md.

Coleburn, A. B., M. D., Assistant-Physician, Connecticut State Hospital for the Insane, Middletown, Conn.

Cornell, William Burgess, M. D., Assistant-Physician, Sheppard and Enoch Pratt Hospital, Towson, Md.

Copp, Owen, M. D., Secretary and Executive Officer, State Board of Insanity, Room 36, State House, Boston, Mass.

Crumbacker, W. P., M. D., Superintendent, Independence State Hospital, Independence, Iowa.

De Weese, Cornelius, M. D., Medical Director, The Laurel Sanitarium, Laurel, Md.

Dewey, Richard, M. D., Physician-in-Charge, Milwaukee Sanitarium, Wauwatosa, Wis.

Dewing, Oliver M., M. D., Medical Superintendent, Long Island State Hospital, Brooklyn, N. Y.

Dill, D. M., M. D., Superintendent, Essex County Hospital for the Insane, 425 South Orange Avenue, Newark, N. J.

Dold, William Elliott, M. D., Physician-in-Charge, River Crest Sanitarium, Astoria, L. I., New York City.

Drewry, William F., M. D., Medical Superintendent, Central State Hospital, Petersburg, Va.

Dunton, Wm. Rush, Jr., M. D., Assistant-Physician, Sheppard and Enoch Pratt Hospital, Towson, Md.

Elliott, Robert M., M. D., Medical Superintendent, Willard State Hospital, Willard, N. Y.

English, W. M., M. D., Superintendent, Hospital for Insane, Hamilton, Ontario.

Evans, Britton D., M. D., Medical Director, The New Jersey State Hospital at Morris Plains, Greystone Park, N. J.

Eyman, Henry C., M. D., Superintendent, Massillon State Hospital, Massillon, Ohio.

Ferris, Albert Warren, M. D., President, New York State Commission in Lunacy, Albany, N. Y.

Fisher, E. Moore, M. D., Assistant-Physician, New Jersey State Hospital, at Morris Plains, Greystone Park, N. J.

Franz, Shepard I., A. B., Ph. D., Psychologist, Government Hospital for the Insane, Washington, D. C.

French, Edward, M. D., Superintendent, Medfield Insane Asylum, Harding, Mass.

Frost, Henry P., M. D., First Assistant-Physician, Buffalo State Hospital, Buffalo, N. Y.

Garrett, R. Edward, M. D., Assistant-Physician, Maryland Hospital for the Insane, Catonsville, Md.

Givens, Amos J., M. D., Superintendent, Stamford Hall, Stamford, Conn.

Goodwill, V. L., M. D., Medical Superintendent, Prince Edward's Island Hospital for the Insane, Charlottetown, P. E. I., Canada.

Gundry, Alfred T., M. D., Resident Physician, Gundry Sanitarium, Athol, Catonsville, Md.

Gundry, Lewis H., M. D., Superintendent, Relay Sanitarium, Relay, Baltimore County, Md.

Gundry, Richard F., M. D., Physician-in-Charge, The Richard Gundry Home, Catonsville, Md.

Guth, Morris S., M. D., Superintendent, State Hospital for the Insane, Warren, Pa.

Hamilton, Samuel W., M. D., Second Assistant-Physician, Utica State Hospital, Utica, N. Y.

Hancker, William H., M. D., Superintendent, Delaware State Hospital, Farnhurst, Del.

Harmon, F. W., M. D., Superintendent, Longview Hospital, Cincinnati, Ohio.

Hattie, W. H., M. D., Medical Superintendent, Nova Scotia Hospital, Halifax, N. S.

Hawke, W. W., M. D., Chief Resident Physician, Philadelphia Hospital for the Insane, Philadelphia, Pa.

Hill, Charles G., M. D., Physician-in-Chief, Mt. Hope Retreat, Baltimore, Md.

Houston, John A., M. D., Superintendent, Northampton State Hospital, Northampton, Mass.

Howard, Eugene H., M. D., Medical Superintendent, Rochester State Hospital, Rochester, N. Y.

Howard, Herbert B., M. D., formerly Superintendent, Massachusetts General Hospital, Boston, Reading, Mass.

Hurd, Arthur W., M. D., Superintendent Buffalo State Hospital, Buffalo, N. Y.

Hurd, Henry M., M. D., Superintendent of the Johns Hopkins Hospital and member State Commission in Lunacy, Baltimore, Md.

Hutchings, Richard H., M. D., Superintendent, St. Lawrence State Hospital, Ogdensburg, N. Y.

Hutchinson, Anna E., M. D., Woman Physician, Manhattan State Hospital, Ward's Island, New York, N. Y.

Kilbourne, Arthur F., M. D., Superintendent, Rochester State Hospital, Rochester, Minn.

Kindred, J. Joseph, M. D., President and Consulting Physician, River Crest Sanitarium, Astoria, L. I., New York City.

King, George W., M. D., Medical Director, Hudson County Hospital for the Insane, Secaucus, Jersey City, N. J.

Lamb, Robert B., M. D., Medical Superintendent, Matteawan State Hospital, Fishkill-on-the-Hudson, N. Y.

Langdon, F. W., M. D., Medical Director, The Cincinnati Sanitarium, 5 Garfield Place, Cincinnati, Ohio.

Laughlin, Charles E., M. D., Medical Superintendent, Southern Indiana Hospital for the Insane, Evansville, Ind.

Long, Oscar R., M. D., Medical Superintendent, State Asylum, Ionia, Mich.

Lyons, A. J., M. D., Superintendent, Second Hospital for the Insane, Spencer, W. Va.

McAllaster, Benjamin R., M. D., Assistant-Physician, Cherokee State Hospital, Cherokee, Iowa.

MacDonald, Carlos F., M. D., Physician-in-Charge, Dr. MacDonald's House, Central Valley, N. Y.

McGaffin, Charles G., M. D., Assistant-Physician, Taunton Insane Hospital, Taunton, Mass.

McKelway, John Irvine, M. D., Assistant-Physician, Binghamton State Hospital, Binghamton, N. Y.

Mabon, William, M. D., Superintendent and Medical Director, Manhattan State Hospital, Ward's Island, New York, N. Y.

Meredith, H. B., M. D., Superintendent, State Hospital for the Insane, Danville, Pa.

Mills, Charles K., M. D., Professor of Neurology, University of Pennsylvania, 1909 Chestnut Street, Philadelphia, Pa.

Mitchell, H. W., M. D., Medical Superintendent, Eastern Maine Insane Hospital, Bangor, Me.

Mitchell, T. J., M. D., Superintendent, State Insane Hospital, Asylum, Miss.

Moher, Thomas J., M. D., Medical Superintendent, Hospital for Insane, Brockville, Ontario.

Mosher, J. Montgomery, M. D., Attending Specialist in Mental Diseases, Albany Hospital, 170 Washington Avenue, Albany, N. Y.

Moulton, A. R., M. D., Senior Assistant-Physician, Pennsylvania Hospital for the Insane, Philadelphia, Pa.

Munson, J. F., M. D., Resident Pathologist, Craig Colony for Epileptics, Sonyea, N. Y.

Noble, Henry S., M. D., Superintendent, Connecticut Hospital for the Insane, Middletown, Conn.

O'Hanlon, George, M. D., First Assistant-Physician, Kings Park State Hospital, Kings Park, L. I., N. Y.

O'Malley, Mary, M. D., Assistant-Physician, Government Hospital for the Insane, Washington, D. C.

Orth, H. L., M. D., Superintendent and Physician, State Lunatic Hospital, Pouch A, Harrisburg, Pa.

Packard, Frederic H., M. D., Assistant-Physician and Pathologist, McLean Hospital, Waverley, Mass.

Packer, Flavius, M. D., Physician-in-Charge, The Knolls, West Hill, Riverdale, New York City.

Parsons, Frederick W., M. D., Second Assistant-Physician, Hudson River State Hospital, Poughkeepsie, N. Y.

Palmer, H. L., M. D., Superintendent, Utica State Hospital, Utica, N. Y.

Perry, Middleton Lee, M. D., Superintendent, State Hospital for Epileptics, Parsons, Kan.

Pilgrim, Charles W., M. D., Medical Superintendent, Hudson River State Hospital, Poughkeepsie, N. Y.

Pritchard, William H., M. D., Superintendent, Ohio Hospital for Epileptics, Gallipolis, Ohio.

Richardson, W. W., M. D., Resident Physician, State Hospital for Insane, Norristown, Pa.

Ricksher, Charles, M. D., Assistant-Physician, Danvers Insane Hospital, Hathorne, Mass.

Robins, Wm. L., M. D., Consultant in Nervous and Mental Diseases, Freedman's Hospital, Washington, D. C.

Russell, William L., M. D., Medical Inspector State Commission in Lunacy, Poughkeepsie, N. Y.

Sanborn, Bigelow T., M. D., Superintendent, Maine Insane Hospital, Augusta, Me.

Sandy, William C., M. D., Third Assistant-Physician, New Jersey State Hospital, Trenton, N. J.

Scribner, E. V., M. D., Medical Superintendent, Worcester Insane Asylum, Worcester, Mass.

Shanahan, William T., M. D., Acting Superintendent, Craig Colony for Epileptics, Sonyea, N. Y.

Shepherd, A. F., M. D., Superintendent, Dayton State Hospital, Dayton, Ohio.

Smith, George A., M. D., Superintendent, Central Islip State Hospital, Central Islip, L. I., N. Y.

Smith, Samuel E., M. D., Medical Superintendent, Eastern Indiana Hospital for the Insane, Easthaven, Richmond, Ind.

Somers, Elbert M., M. D., First Assistant-Physician, St. Lawrence State Hospital, Ogdensburg, N. Y.

Southard, Elmer E., M. D., Pathologist to State Board of Insanity, 37 Trowbridge Street, Cambridge, Mass.

Stanley, Charles E., M. D., Assistant-Physician, State Hospital for Insane, Middletown, Conn.

Stedman, Henry R., M. D., Superintendent "Bournewood" Hospital for Mental Diseases, Brookline, Mass.

Stockton, George, M. D., Superintendent, Columbus State Hospital, Columbus, Ohio.

Swift, Henry M., M. D., Senior Assistant-Physician, Danvers Insane Hospital, Hathorne, Mass.

Thompson, W. N., M. D., Superintendent and Physician, Hartford Retreat, Hartford, Conn.

Tomlinson, H. A., M. D., Superintendent St. Peter State Hospital, St. Peter, Minn.

Townsend, Theo. I., M. D., Assistant-Physician, Bloomingdale Hospital, White Plains, N. Y.

Uhls, L. L., M. D., Superintendent, Osawatomie State Hospital, Osawatomie, Kan.

Wagner, Charles G., M. D., Superintendent, Binghamton State Hospital, Binghamton, N. Y.

White, Moses J., M. D., Medical Superintendent, Milwaukee Hospital for Insane, Wauwatosa, Wis.

White, William A., M. D., Superintendent, Government Hospital for the Insane, Washington, D. C.

Wolfe, Mary M., M. D., Resident Physician, Women's Department Norristown State Hospital, Norristown, Pa.

Work, Hubert, M. D., Superintendent, Woodcroft Hospital, Pueblo, Colo.

The following visitors and guests of the Association registered their names with the Secretary:

Agnew, Anna M., M. D., Woman Physician, Long Island State Hospital, Brooklyn, N. Y.

Beutler, Mrs. W. F., Wauwatosa, Wis.

Blair, E. Scott, M. D., Superintendent, Southern California State Hospital, Patton, Cal.

Bond, Mrs. George F. M., 960 North Broadway, Yonkers, N. Y.

Campbell, C. Macfie, M. B., Associate in Clinical Psychiatry, Psychiatric Institute of the New York State Hospitals, Ward's Island, New York, N. Y.

Cook, Robert G., M. D., Physician-in-Charge, Brigham Hall, Canandaigua, N. Y.

Craig, Anna, M. D., Woman Physician, Kings Park State Hospital, Kings Park, L. I., N. Y.

Crumbacker, Mrs. W. P., Independence, Iowa.

Drewry, Mrs. W. F., Petersburg, Va.

English, Mrs. Eleanor M. Clark, Hamilton, Ontario.

Frost, Miss Anna L., Buffalo, N. Y.

Garvin, William C., M. D., Assistant-Physician, Manhattan State Hospital, Ward's Island, New York, N. Y.

Guth, Mrs. Morris H., Warren, Pa.

Hattie, Mrs. W. H., Halifax, Nova Scotia.

Holmes, Howard F., M. D., Assistant Physician, State Hospital, Tewksbury, Mass.

Hopkinson, S. W., Trustee, Danvers Insane Hospital, Bradford, Mass.

Kilbourne, Mrs. Arthur F., Rochester, Minn.

Kilbourne, Miss Katharine, Rochester, Minn.

Kindred, Mrs. J. Joseph, Astoria, New York, N. Y.

Kirby, George H., M. D., Director of Clinical Psychiatry, Manhattan State Hospital, Ward's Island, New York, N. Y.

McKelway, Mrs. John Irvine, Binghamton, N. Y.

May, James V., M. D., Assistant-Physician, Binghamton State Hospital, Binghamton, N. Y.

Moher, Mrs. Thomas J., Brockville, Ontario.

Moore, J. W., M. D., Assistant-Physician, Central Islip State Hospital, Central Islip, L. I., N. Y.

Palmer, Mrs. Nellie B., Trustee Medfield Insane Asylum, South Framingham, Mass.

Pollock, Henry M., M. D., Superintendent, State Hospital for the Insane, Norwich, Conn.

Rosanoff, A. J., M. D., Second Assistant-Physician, Kings Park State Hospital, Kings Park, L. I., N. Y.

Rusk, Glanville Y., M. D., Pathologist, Manhattan State Hospital, Ward's Island, New York, N. Y.

Scott, Col. Albert, President, Kentucky State Board of Control for Charitable Institutions, 432 North 26th Street, Louisville, Ky.

Scribner, Mrs. E. V., Worcester, Mass.

Shillite, G. M., Surgeon, Carnegie Hospital, Pittsburg, Pa.

Skinner, William W., M. D., Consulting Surgeon Willard State Hospital, 447 Main Street, Geneva, N. Y.

Skinner, Mrs. William W., Geneva, N. Y.

Smith, Mrs. G. A., Central Islip, L. I., N. Y.

Somers, Mrs. E. M., Ogdensburg, N. Y.

Terflinger, Fred W., M. D., Medical Superintendent, Northern Indiana Hospital for the Insane, Longcliff, Logansport, Indiana.

Wallace, H. R., M. D., 1101 Masonic Temple, Chicago, Ill.

Wells, A. J. G., Member Kentucky State Board of Control for Charitable Institutions, Murray, Ky.

Williams, H. L., Trustee Northampton State Hospital, Northampton, Mass.

Williams, Mrs. H. L., Northampton, Mass.

Willis, R. L., M. D., Superintendent, Eastern Kentucky Lunatic Asylum, Lexington, Ky.

Woodbury, Frank, M. D., Secretary, Committee on Lunacy of Pennsylvania, 1225 Sansom Street, Philadelphia, Pa.

The President.—The Association will come to order. We will listen to the memorial notices of members who have died during the year.

The following memorial notices were read:

Dr. D. R. Brower, by Sanger Brown, M. D. (by title); Dr. John P. Brown, by A. V. Goss, M. D. (by title); Dr. H. E. Buchan, by C. K. Clarke, M. D. (by title); Dr. Walter R. Gillette, by William Mabon, M. D.; Dr. C. E. Hickey, by Edward Ryan, M. D. (by title); Dr. Henry A. Tobey, by H. C. Eyman, M. D.

THE PRESIDENT.—It has been intimated in certain quarters that innovations will not be out of place. I propose to institute one myself with regard to the afternoon session. A year ago I accepted this office with considerable trepidation on account of impaired physical health, and I wrote the Secretary some time ago that I would not present an address. I pray your indulgence in this respect, for I have simply been unable to bring myself to the task of writing anything. The afternoon session will, therefore, begin with the first paper on the program, which is "Borderland Cases of Insanity and the Voluntary Patient," by Dr. Ferris.

A recess was then taken until 2.30 p. m.

## AFTERNOON SESSION.

THE PRESIDENT.—We will now take up the reading of papers.

The following papers were read:

"Borderland Cases of Insanity and the Voluntary Patient," by Albert Warren Ferris, M. D., New York City. Discussed by Drs. Mabon, H. M. Hurd, Copp, Burr, Brush, Pilgrim, Howard, MacDonald, Dewey, G. S. Adams, Kilbourne and Dr. Ferris in closing.

"A Note on the Treatment of Acute Insanity," by Sanger Brown, M. D., Chicago, Ill. Discussed by Drs. Hutchings, Sanborn, Burr, Packard, Brush, Abbot, Dewey and Dr. Brown in closing.

"Psychopathia Conjugalis," by Clarence B. Farrar, M. D., Baltimore, Md. (By title.)

"A Review of the Recent Studies of General Paresis," by James V. May, M. D., Binghamton, N. Y. Discussed by Drs. Rosanoff, Hill, H. M. Hurd, Hawke and Dr. May in closing.

THE PRESIDENT.—I will now call upon the Chairman of the Committee of Arrangements for the deferred report of that Committee.

DR. EVANS.—I am more than appreciative of your indulgence in waiting for this report. My bag, containing this report, went astray and has just come to hand.

### REPORT OF THE COMMITTEE OF ARRANGEMENTS.

*Mr. President:* A substantial report of your Committee of Arrangements is set forth in the general program and needs but little formal elaboration.

The selection of the Marlborough-Blenheim Hotel was made after a careful inquiry into the accommodations of the various hotels of Atlantic City.

The matter of special rates was taken up with the Trunk Line Association and so little was offered in the way of rates and so many complications associated with the small reduction, that your Committee deemed it unwise to attempt to make any arrangement for reduced rates. The American Medical Association had been given concessions which would have been acceptable to your Committee, but the Trunk Line Association declined to make such terms for our Association.

The program sets forth the speakers who are to deliver the addresses of welcome: the Honorable Joseph S. Frelinghuysen, President of the Senate of the State of New Jersey, and the Honorable Franklin P. Stoy, Mayor of Atlantic City. We were fortunate enough to have Professor J. Woodbridge Riley consent to favor us with the annual address.

A number of the hotels offered more moderate rates than the Marlborough-Blenheim, but your Committee of Arrangements thought it better to accept the terms and conditions offered by the Marlborough-Blenheim Hotel. A large number of hotels offered special rates to the members of this Association, and prominently among them the Hotel Rudolf.

The matter of an annual banquet was taken up and after a conference it was decided that it was not within the province of the Committee of Arrangements to determine its advisability, but rather a matter for the Association to determine at its regular session.

Atlantic City is so well provided with places of recreation and amusement that it was deemed wise not to make out any schedule of entertainment for members of the Association or their families and guests.

Very respectfully submitted,

B. D. Evans,

*Chairman, Committee of Arrangements.*

On motion the report was accepted and adopted.

The President.—I would state that immediately after the adjournment of this session, the Editorial Committee of the American Journal of Insanity will meet in this room with the Committee appointed last year to confer with them.

I will now declare an adjournment until 8 o'clock this evening.

## Evening Session.

The President.—Dr. Drew was obliged to be absent and has requested Dr. Copp to read his paper.

Dr. Copp.—Those of you who have heard Dr. Drew read one of his own papers will know under what difficulties I am laboring in reading one for him.

The following papers were read:

"Impressions of Some Asylums in Scotland," by C. A. Drew, M. D., State Farm, Mass. (Read by Dr. Owen Copp.)

"The Present Status of Women Physicians in Hospitals for the Insane," by Mary M. Wolfe, M. D., Norristown, Pa. Discussed by Drs. H. M. Hurd, Sanborn, H. B. Howard, White, Houston, Babcock, Pilgrim and Dr. Wolfe in closing.

"The Employment of Women Nurses in the Men's Wards in Hospitals for the Insane," by Thomas J. Moher, M. D., Brockville, Ontario. (By title.)

"Forms of Insanity in Five Years' Admissions to and Discharges from Hospitals for the Insane in Massachusetts," by E. Stanley Abbot, M. D., Waverley, Mass.

"The Value of Staff Conferences in State Hospitals," by Elbert M. Somers, M. D., Ogdensburg, N. Y. Discussed by Dr. Southard.

"Pellagra in the United States," J. W. Babcock, M. D., Columbia, S. C. Discussed by Drs. H. M. Hurd, Kilbourne, Perry, Brush and Babcock in closing.

On motion the meeting adjourned.

WEDNESDAY, JUNE 2, 1909, 10 A. M.

The meeting was called to order by the President.

THE PRESIDENT.—The Council has had no meeting since yesterday and has no report to make. The first order of business is the election of the members proposed yesterday. The Secretary will read the names.

(This list is given in the first report of the Council.)

DR. H. M. HURD.—I move that these members be elected and that the Secretary be instructed to cast the ballot of the Association electing them to membership.

Which motion was duly seconded and carried.

THE PRESIDENT.—The Secretary has cast the ballot of the Association as instructed and these physicians are elected members of the Association.

We will now have the report of the Committee appointed at the last meeting of the Association to confer with the editors of the AMERICAN JOURNAL OF INSANITY. Dr. White is Chairman of that Committee.

REPORT OF THE COMMITTEE APPOINTED AT THE LAST MEETING OF THE ASSOCIATION TO CONFER WITH THE EDITORS OF THE AMERICAN JOURNAL OF INSANITY.

Your Committee had for consideration a proposition to do away with the classification of associate members and make all members active. At

the same time it was contemplated doing away with the publication of the annual volume of transactions and instead publishing the transactions in the JOURNAL and sending the JOURNAL to each member of the Association. The object of this procedure was to do away with the expense of the annual transactions, which was considered unnecessary, especially because of its very late appearance. It was thought also that the associate members would be perfectly willing to pay the additional $3.00 per annum consequent upon their transfer to the active list, provided thereby they received the JOURNAL.

In canvassing the situation, it has appeared to your Committee that there were many reasons why the transactions should not be dispensed with. They are considered highly valuable by many libraries and many of the members themselves would prefer them to having the proceedings of the meetings distributed throughout the various numbers of the JOURNAL.

Your Committee, therefore, makes the following suggestions, which would seem in their minds best to cover all of the difficulties of the situation:

(1) That an effort be made to secure the publication of the transactions more promptly after the annual meeting than heretofore. It is believed that this can be done by combining the editorship of the transactions and of the JOURNAL in the same individual and by refusing to consider for publication communications to the Association which are not handed in in typewritten form at the time of their presentation.

(2) Inasmuch as the finances of the Association are in such good condition, there being at present approximately $2000 surplus in the treasury, your Committee thinks it a good business proposition to undertake to furnish the JOURNAL to members of the Association at an annual subscription rate of $3.00. It will thus be seen that an associate member paying $2.00 per annum dues and $3.00 for the JOURNAL will secure both the transactions and the JOURNAL for the annual expenditure of $5.00.

(3) Your Committee desires to urge the heads of all institutions engaged in the care of the insane in this country to subscribe to the JOURNAL for the institutions and recommends that the editor call specific attention to this necessity by addressing such heads, either in person or by communicating with the governing boards of such institutions as do not now subscribe.

(4) Your Committee also recommends for the purpose of increasing the revenues from advertising in the JOURNAL that the editor thereof communicate with all manufacturers of hospital goods of whom he may learn, calling their attention to the desirability of advertising their wares in a journal which has a circulation among institutions containing in the aggregate upwards of 150,000 beds.

(5) Your Committee further recommends that the Treasurer be instructed to pay such amount as may be necessary to make up any deficit arising from the publication of the JOURNAL.

Respectfully submitted,

WILLIAM A. WHITE, *Chairman.*

On motion, duly seconded, the report was accepted and adopted.

THE PRESIDENT.—I will call for the report of the delegate to the Congress of American Physicians and Surgeons.

DR. ABBOT.—Dr. Tuttle, the alternate delegate, who makes the report, is absent in Europe and he has asked me to read the report for him.

ATLANTIC CITY, June 2, 1909.

*Dr. A. F. Kilbourne, President of the American Medico-Psychological Association:*

DEAR SIR.—I beg to make my report as Alternate Delegate to the American Congress of Physicians and Surgeons.

The Executive Committee of the American Congress of Physicians and Surgeons, composed of delegates from the various societies and associations of the Congress, met at the University Club, in New York, on the evening of January 9. Sixteen delegates were present.

Dr. Wm. H. Carmalt was chosen President, and Dr. Wm. K. Simpson Secretary of the Committee.

The application for admission to membership of the American Society of Topical Medicine was considered and was rejected for the reason that the volume of transactions submitted did not show sufficient original work.

The resignation from the Congress of the American Physiological Society was received and accepted. There was some criticism of the previous method of conducting the meetings of the Congress and a plea was made for a more general discussion of topics presented instead of having reports of progress in the different branches from a very few men.

The following were elected members of the Program Committee:

Dr. Edward Reynolds, 65 Marlborough St., Boston; Dr. Abram Jacobi, 19 East 47th St., New York; Dr. Harold C. Ernst, 240 Longwood Ave., Boston; Dr. Herbert L. Burrell, 22 Newbury St., Boston; Dr. Charles Stedman Bull, 47 West 36th St., New York.

The Treasurer reported a balance on hand of $800.

The Committee elected as officers of the Congress:

President, Dr. Edward L. Trudeau, Saranac Lake, N. Y.; Secretary, Dr. William H. Carmalt, 87 Elm St., New Haven, Conn.; Treasurer, Dr. Newton M. Shaffer, 28 East 38th St., New York.

Respectfully submitted,

GEORGE T. TUTTLE.

DR. H. M. HURD.—I move that this report be accepted and placed on file.

Which motion was duly seconded and carried.

THE PRESIDENT.—Dr. Russell, as Chairman of the Committee on Legislation, will now present his report.

Dr. Russell.—Last year at the meeting in Cincinnati a special Committee was appointed to represent the Association in furthering the passage of a bill then pending in Congress. This bill provided for the deportation of all alien convicts at the expiration of their sentences, and was known as the Bennett Bill. The Committee did what they could to further its passage, but it failed. The probability is that a measure with the same purposes in view will be introduced again, probably in connection with other measures relating to immigration that may be the outcome of the report of a special commission that was appointed about two years ago.

This commission consists of three Senators, three members of the House of Representatives and three members appointed by the President. They have been making an extensive study of the subject and will probably make a comprehensive report, perhaps next year.

This Committee of the Association thinks it would be advisable that a new Committee be appointed this year with broader instructions than we had last year so that it might not only interest itself in matters before Congress, but also in the administration of departments that have to do with immigration. There are several points in regard to which useful work may be done. In the first place in regard to the medical inspection of immigrants; this is now provided by law and is attended to by the United States Public Health and Marine Hospital Service. At only one port, so far as we know, is any special attention given to inspection of immigrants with respect to the prevalence of mental diseases, that is at New York. There three specially qualified physicians are employed for that purpose. The result is that now as many cases are discovered in a month as were formerly detected in a whole year.

There are also possibilities of co-operating with other bodies interested in immigration; for instance, the National Prison Association. It seems to me, and to the Committee, that it would be advisable to give broader instructions, and the majority of the Committee feel that Dr. White should be the Chairman of the Committee, as he is located so favorably for watching the proceedings of Congress, and becoming well acquainted with the men in the department and members of Congress as well. Dr. White has been the active member of the Committee and has done practically all the work. I think it would be well to call on Dr. White for the details of what has been done as he is more familiar with them than I am.

Dr. White.—I have not very much to add to what Dr. Russell has said. I took up with Mr. Bennett the consideration of the bill we were interested in last year, and Mr. Bennett secured its consideration in the House by unanimous consent. It was late in the session and a good deal of objection was raised against the measure, and in the midst of this discussion the House adjourned. That left the bill in the air, as it was too late to get it on the calendar. After this happened I saw Professor Jenks, of Cornell University, a member of the Commission on Immigration, and had quite a talk with him about the bill. I understand from him that the whole matter is going to be very carefully reviewed, and that the provisions of the

Bennett Bill will probably be incorporated in a new bill at the next session of Congress, which will be somewhat more fully digested before presentation. The whole situation will be more thoroughly and carefully studied before an attempt is made to incorporate it in a definite bill.

I think we will hear from the bill during the next session, and by continuing the Committee we may be in a position to accomplish some good. I think it an important matter for consideration. This Association ought to have some Committee in existence which will be ready to represent the views of the Association at any time it seems advantageous to do so and with whom the Congressional Committee can communicate. This Committee of the Association can get other people like the National Prison Association interested and communicate their views also.

Dr. Bancroft.—The report of the Chairman, Dr. Russell, is interesting and gratifying, although, of course, it was unfortunate that the Bennett Bill should not have received consideration and discussion in Congress. However, it is gratifying to hear from Dr. White that probably the Bennett Bill will come up at some future time for action. There are some difficulties readily conceivable why the bill should not be passed. The fact that criminals suffering imprisonment for crime might have families in existence in this country, and the deportation after the expiration of the sentence might possibly bring up difficulties easily understandable. However, it is hoped that the Bennett Bill will come up for favorable consideration by Congress later on.

I believe that the proposition mentioned to continue this Committee, possibly with enlarged membership, with the view of keeping in touch with Congress in any future legislation on this subject is important. I think that as an organization it is extremely important that this Association should make itself felt in the national legislature, if possible, in the prevention of insanity, and this is one of the ways in which we can materially contribute toward that end.

It is important that the foreign element that is constantly coming into this country should be carefully inspected at the time of their arrival on this shore, and this Committee with enlarged powers could certainly have great weight, it seems to me, if they could come in touch with organizations and with the government concerning the mental inspection of new arrivals.

I, therefore, move that the Chair appoint a Committee of five, of which Dr. White, of Washington, D. C., be Chairman, who, with the advice and consent of the Council of the Association, shall favor any legislative or administrative measures which shall bring about the better regulation of immigration to this country of persons suffering from mental disease or defect.

Dr. Brush.—It is an important matter that the powers and duties of this Committee be referred to the Council and that it instructs and directs. It is a little difficult, as I think Dr. Bancroft will admit, to lay down specifically what these duties are in the resolution he proposed. These

duties could be more clearly stated by the Council, who could give it careful consideration. I move this as an amendment to Dr. Bancroft's resolution.

THE PRESIDENT.—Will you accept that amendment, Dr. Bancroft?

DR. BANCROFT.—Yes, I will.

Dr. Bancroft's motion as amended was duly seconded and carried. On motion the report of Dr. Russell and Dr. White for the Committee on Legislation was accepted and adopted.

THE PRESIDENT.—The next in order is the report of Dr. H. M. Hurd on the history of the Association.

DR. H. M. HURD.—We can report that no progress has been made by the Committee, but that I hope another year to be able to come before the Association and ask for an appropriation for publishing the book. (Applause.)

THE PRESIDENT.—Dr. Hurd's report will be accepted unless there is objection. The Chair hears none and the report is accepted.

The next in order is the report of the Nominating Committee.

DR. BURGESS.—Your Nominating Committee reports as follows:

For President, William F. Drewry, M. D., Petersburg, Va.

For Vice-President, Charles W. Pilgrim, M. D., Poughkeepsie, N. Y.

For Secretary and Treasurer, Charles G. Wagner, Binghamton, N. Y.

For Councilors: Henry D. Allen, M. D., Milledgeville, Ga.; Owen Copp, M. D., Boston, Mass.; F. W. Harmon, Cincinnati, Ohio; George Villeneuve, M. D., Quebec.

For Auditor, George W. King, M. D., Jersey City, N. J.

For Councilor to fill vacancy caused by promotion of Dr. Wagner, Robert B. Lamb, M. D., Matteawan, N. Y.

On motion, duly seconded, the report of the Nominating Committee was accepted and adopted.

On motion, duly seconded, the President was authorized and directed to cast the ballot of the Association electing these officers.

THE PRESIDENT.—I hereby cast the ballot of the Association electing these officers for the ensuing year. The next is the report of the Auditors.

DR. HUTCHINGS.—I am the only representative of the Auditors who is present at this meeting. I carefully examined the books and accounts of the Association, including the vouchers and the bank books, and found everything in good order and according to the report of the Treasurer.

The accounts of the AMERICAN JOURNAL OF INSANITY were also examined and proper vouchers were found for the several expenditures. It is suggested that the publishing company be requested to hereafter submit the bank books in order that they may be checked up with the statement of the Treasurer.

On motion, duly seconded, the report of the Auditing Committee was accepted and adopted.

THE PRESIDENT.—I will appoint as the Committee on Resolutions: Dr. B. D. Evans, of New Jersey; Dr. M. J. White, of Wisconsin, and Dr. Charles G. Hill, of Maryland. We will now proceed to the reading of papers.

The following papers were read:

"The Insanity-Defence for Crime," by John B. Chapin, M. D., Philadelphia, Pa.

"Court Testimony of Alienists," by B. D. Evans, M. D., Morris Plains, N. J.

DR. EVANS.—This is an attempt on my part to put in the form of a paper an address I delivered to the State Bar Association at Atlantic City some time ago from notes, and if it seems in parts disconnected I hope you will indulge me.

The papers of Drs. Chapin and Evans were discussed by Drs. Tomlinson, Stedman, Burgess, Brush, Mills, Mitchell, Hill, Southard and Dr. Evans in closing.

THE PRESIDENT.—I will now declare a recess until 2 o'clock this afternoon.

## AFTERNOON SESSION.

THE PRESIDENT.—The Association will please come to order.

DR. H. M. HURD.—I would like to move, in view of the fact that we are a little behind in our program, that discussions be limited to five minutes, and that the President be instructed to mark a time limit.

Which motion was duly seconded and carried.

DR. STEDMAN.—I have been asked to present this resolution.

WHEREAS, The insanity-defence for crime and the court testimony of alienists have been discussed both by the public and by the legal and medical professions, without arriving at unanimity of opinion;

WHEREAS, The question of responsibility, the differentiation of insanity and crime, the method of selecting medical experts, the value of hypo-

thetical evidence, the formulation of hypothetical questions, and the medico-legal attitude of the medical profession have all been discussed by representative members of this Association in annual meeting with the result of disagreement or absolute discordance of opinions;

WHEREAS, The conduct and attitude of certain medico-legal experts of this country has been subjected to severe adverse criticisms in the press and elsewhere;

*Resolved,* That the American Medico-Psychological Association do endeavor to arrive at a satisfactory definition of the medico-legal issue in so far as it bears upon the attitude and position of its members, and

That, to this end, a representative Committee of five be appointed by the Chair to report upon this question at the next annual meeting and to present a set of resolutions which shall be publicly circulated as representing the opinion of this Association upon the topics above named.

DR. HILL.—I rise to second the resolution. I hope it will not end here and be lost through neglect or indifference as have so many of our good resolutions.

Carried.

The following papers were read:

"Conscious Epilepsy," by L. Pierce Clark, M. D., New York, N. Y.

"The Pathological Significance of Mental Symptoms. Wernicke's Classification of Symptoms," by A. J. Rosanoff, M. D., Kings Park, N. Y.

"Studies in Heredity with Examples," by William C. Sandy, M. D., Trenton, N. J. Discussed by Dr. Abbot.

"Hysteria: What it is and What it is Not," by Charles K. Mills, Philadelphia, Pa. Discussed by Drs. Hill, Stedman and Mills in closing.

THE PRESIDENT.—The Council will meet immediately after the evening session. We will now have a recess until 8.30 this evening, when Professor J. Woodbridge Riley will deliver the annual address.

## EVENING SESSION.

THE PRESIDENT.—The Association will please come to order. I have the honor and pleasure of introducing to you Professor J. Woodbridge Riley, Taylor Professor of Philosophy (Department of Psychology), Vassar College, Poughkeepsie, N. Y., who will deliver the annual address, "Mental Healing in America."

Professor Riley then delivered his address, "Mental Healing in America," which was greeted with much applause.

Adjournment.

THURSDAY, JUNE 3, 1909, 10 A. M.

THE PRESIDENT.—The Association will please come to order. The next thing is the report of the Council.

REPORT OF THE COUNCIL OF THE AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION.

ATLANTIC CITY, N. J., June 3, 1909.

The Council has fixed the place and time for the next annual meeting at Washington, D. C., May 3, 4, 5, and 6, 1910, in conjunction with the Congress of American Physicians and Surgeons, of which this Association is a constituent society.

The Council makes the following recommendations:

That the incoming President be authorized to appoint a Program Committee for the next annual meeting, and also a Committee of Arrangements.

That three hundred dollars, or as much thereof as may be needed, be appropriated for the use of the AMERICAN JOURNAL OF INSANITY.

That the dues for the ensuing year be fixed at the usual rate, viz., five dollars for active members and two dollars for associate members.

That in accordance with custom the Secretary be authorized to reimburse Professor Riley for his traveling and hotel expenses.

That the Secretary be authorized to publish the transactions of this meeting.

By resolution, the Council has authorized the following instructions and powers to the Committee on Immigration Legislation as follows:

We authorize this Committee to use its influence to promote any legislative or administrative measures having for their purpose improvements in the class of immigration and a better medical inspection of immigrants at the various ports of entry into this country.

The Council recommends the transfer of the following named associate members to the active class:

Samuel W. Hamilton, M. D., Utica, N. Y.; James F. Munson, M. D., Sonyea, N. Y.

The Council recommends the election of the following named physician to the active class:

J. S. De Jarnette, M. D., Staunton, Va.

The Council recommends the election of the following named physicians to the associate class:

Francis M. Barnes, Jr., M. D., Baltimore, Md.; Lena Beach, M. D., Cherokee, Iowa; C. C. Burlingame, M. D., Westboro, Mass.; H. D. Earl, M. D., Cherokee, Iowa; John Cecil George, M. D., Dayton, Ohio; M. D. Jordan, M. D., Westboro, Mass.; Ralph C. Kell, M. D., Spring City, Pa.;

T. L. Long, M. D., Cherokee, Iowa; Benjamin R. McAllaster, M. D., Cherokee, Iowa; Emit Luther McCafferty, M. D., Mt. Vernon, Ala.; William Dempsey Partlow, M. D., Tuscaloosa, Ala.; James H. Randolph, M. D., Tallahassee, Fla.

The Council has received the following applications for active membership. In accordance with the constitution, final consideration of these will be deferred until next year:

W. L. Athon, M. D., Anna, Ill.; Swepson J. Brooks, M. D., Harrison, N. Y.; Robert George Cook, M. D., Canandaigua, N. Y.; George Van Ness Dearborn, M. D., Cambridge, Mass.; James Leon Greene, M. D., Hospital, Ill.; Presley C. Hunt, M. D., Washington, D. C.; John C. King, M. D., Marion, Va.; George H. Kirby, M. D., New York, N. Y.; John McCampbell, M. D., Morganton, N. C.; James J. Neely, M. D., Bolivar, Tenn.; John M. Semple, M. D., Medical Lake, Wash.; Fred W. Terflinger, M. D., Logansport, Ind.; David Fairchild Weeks, M. D., Skillman, N. J.; Tom A. Williams, M. D., Washington, D. C.; William Tassie Wilson, M. D., Cobourg, Ontario; ——— King, M. D., Mendocino, Cal.; F. Clark, M. D., Stockton, Cal.; Elliott Blair, M. D., Patton, Cal.; Frank W. Hatch, M. D., Sacramento, Cal.; Leonard Stocking, M. D., Agnews, Cal.; R. L. Willis, M. D., Lexington, Ky.; Henry M. Pollock, M. D., Norwich, Conn.; William E. Ramsey, M. D., Perth Amboy, N. J.; Frank Woodbury, M. D., Philadelphia, Pa.

Respectfully submitted,

CHARLES W. PILGRIM, *Secretary.*

On motion, duly seconded, the report of the Council was accepted and adopted.

THE PRESIDENT.—I will appoint the following Committees:

On Legislation and Immigration: Dr. William A. White, Chairman, Washington, D. C.; Dr. William L. Russell, New York; Dr. Owen Copp, Massachusetts; Dr. Albert Warren Ferris, New York, N. Y.; Dr. W. W. Hawke, Pennsylvania.

On Expert Testimony: Dr. Henry R. Stedman, Chairman, Massachusetts; Dr. Carlos F. MacDonald, New York; Dr. Charles K. Mills, Pennsylvania; Dr. H. A. Tomlinson, Minnesota; Dr. Charles P. Bancroft, New Hampshire.

Inasmuch as we are somewhat behind with our program, I will request that those who read papers abridge them so as to bring them within the twenty-minute limit.

The following papers were read:

"Huntington's Chorea," by W. H. Hattie, M. D., Halifax, N. S.

"Hysterical Insanity with Report of Cases," by W. A. Taylor, M. D., Trenton, N. J. (By title.)

"Neurasthenic and Psychasthenic Psychoses," by Henry P. Frost, M. D., Buffalo, N. Y.

"An Analysis of Psychoses Associated with Graves' Disease," by F. H. Packard, M. D., Waverley, Mass. Discussed by Drs. Stedman and Packard.

"Comparative Psychological Studies in the Mental Capacity in Cases of Dementia Præcox and Alcoholic Insanity," by Henry A. Cotton, M. D., Trenton, N. J. (By title.)

"A Study of the Auto- and Somato-Psychic Reaction in Dementia Præcox," by William Burgess Cornell, M. D., Baltimore, Md.

"The Cyclic Forms of Dementia Præcox," by William Rush Dunton, M. D., Towson, Md.

"A Few Histories to Illustrate a Modern Conception of Dementia Præcox," by C. Macfie Campbell, M. B., New York City.

"Acute Alcoholic Hallucinosis," by William C. Garvin, M. D., New York City. Discussed by Drs. Mitchell, Stanley and Garvin.

THE PRESIDENT.—There will be a recess until 2 o'clock this afternoon.

## AFTERNOON SESSION.

THE PRESIDENT.—The meeting will please come to order.

The following papers were read:

"The Ganser Symptom and Symptom-Complex," by Theo. I. Townsend, M. D., Dannemora, New York. Discussed by Drs. Frost and Townsend.

"A Report of Three Cases of Korssakow's Psychosis," by Charles E. Stanley, M. D., Middletown, Conn.

"The Mixed Forms of Manic-Depressive Insanity," by George H. Kirby, M. D., New York City. Discussed by Drs. Abbot, Blumer and Kilbourne.

"Depressions," by E. Moore Fisher, M. D., Morris Plains, N. J. (By title.)

"Anatomical Findings in Senile Dementia: A Diagnostic Study," by E. E. Southard, M. D., Hathorne, Mass. Discussed by Drs. Abbot, Rosanoff, Packard and Southard.

"The Application of Immunity Reaction to the Cerebro-Spinal Fluid," by J. W. Moore, M. D., Central Islip, N. Y. Discussed by Drs. Southard and Rosanoff.

"A Study of Body Temperature in Paralytic Dementia," by A. B. Coleburn, M. D., Middletown, Conn.

THE PRESIDENT.—There will be a meeting of the Council with Dr. White's Committee on Immigration and Legislation immediately in the Council Room.

We will now adjourn until to-morrow morning at ten o'clock.

FRIDAY, JUNE 4, 1909, 10 A. M.

THE PRESIDENT.—The Association will please come to order. The first matter is the report of the Council.

REPORT OF THE COUNCIL FOR JUNE 4, 1909.

The Council has received the applications of the following named physicians for active membership. In accordance with the constitution, final action will be deferred until next year:

Clarence Pierson, M. D., Jackson, La.; William W. Skinner, M. D., Geneva, N. Y.; Edward W. Scripture, M. D., New York, N. Y.

The Council has authorized Dr. Albert Warren Ferris to publish his paper read at this meeting elsewhere than in the AMERICAN JOURNAL OF INSANITY, if he so desires.

The Council recommends the appointment of Dr. John Gerald Fitzgerald, of Boston, Mass., to prepare a paper on "Vaccine Therapy," as the contribution of this Association to the program of the Congress of American Physicians and Surgeons on May 4, 1910.

Respectfully submitted,

CHAS. W. PILGRIM, *Secretary.*

On motion, duly seconded, the report of the Council was accepted and adopted.

THE PRESIDENT.—The next in order is the election of the members proposed yesterday. The Secretary will read the names.

(This list is given in the report of the Council for Thursday.)

DR. LANGDON.—I move that these members be elected and that the Secretary be instructed to cast the ballot of the Association electing them to membership.

Which motion was duly seconded and carried.

THE PRESIDENT.—The Secretary has cast the ballot of the Association as instructed, and these physicians are elected members of the Association.

It is with regret that I announce the death of Dr. Charles F. Folsom, of Boston, one of our honorary members. An obituary notice will be prepared for the transactions.

The following papers were read:

"A Review of Infective-Exhaustive Psychoses; with Special Reference to Sub-Division and Prognosis," by Samuel W. Hamilton, M. D., Utica, N. Y.

"An Anatomical Analysis of Seventy Cases of Senile Dementia," by C. G. McGaffin, M. D., Taunton, Mass. Discussed by Drs. Kirby and McGaffin.

"Notes Comparing General Paralysis and Cerebral Syphilis," by G. Y. Rusk, M. D., New York, N. Y.

"Some Peculiar Nucleolar Alterations in the Ganglion Cells of the Cerebral Cortex," by F. S. Hammond, M. D., Trenton, N. J.

"Scarlet Fever as an Etiological Factor in Subsequent Psychoses," by Edgar B. Funkhouser, M. D., Trenton, N. J. (By title.)

The President.—This completes the scientific part of our program. I will now call for the report of the Committee on Resolutions.

Dr. Hill.—The Chairman of that Committee has requested me to read this report in his absence.

Your Committee on Resolutions beg leave to submit the following, viz.:

*Resolved,* That the thanks of this Association be extended to Prof. J. Woodbridge Riley for the able and interesting address delivered on the evening of June 2, 1909. And be it further

*Resolved,* That the Secretary of this Association be instructed to communicate the same to him in writing and request a copy of his address for publication in our proceedings.

*Resolved,* That the Secretary of this Association be requested to express to the Honorable Joseph S. Frelinghuysen its sincere appreciation of the cordial welcome extended by him on behalf of the State of New Jersey; and also the Honorable Franklin P. Stoy, Mayor, for the hearty reception extended this body on behalf of Atlantic City; and to the proprietors of the Marlborough-Blenheim Hotel for their hospitality and courteous treatment.

Respectfully submitted,

B. D. Evans,
M. J. White,
Chas. G. Hill,
*Committee.*

On motion duly seconded the report was accepted and adopted.

The President.—Personally I wish to express my appreciation of the very good attendance throughout this meeting; at the profound interest

shown in all the papers from first to last, and I sincerely trust we may have as pleasant a meeting in Washington next year.

I will appoint as a Committee to bring before the Association the President-elect Dr. Langdon and Dr. Tomlinson.

Dr. Langdon.—Members of the Association, I take great pleasure in introducing to you your President-elect, Dr. William F. Drewry, of Virginia. (Applause.)

The President-elect.—I wonder, ladies and gentlemen, if there has ever been a man who, on being led to the presidential chair, did not feel very much as if he were being taken to an electric chair. If there has been such an individual he must have been "nervy" indeed. I have endured this ordeal a time or two, but experience has not lessened my embarrassment, yet I am willing to try again. It's like a man getting married the second time. It makes no difference how trying his experience has been he is willing to venture again. (Laughter.)

To be chosen President of this great Association is, to my mind, the highest official honor that can be conferred upon an American physician by his colleagues. It is a position of trust and distinction that has been worthily filled by some of the foremost alienists. I know full well that my shortcomings and lack of qualifications to perform the duties of this great office will lower the high standard maintained by my predecessors, yet, by your help and cordial support, I shall hope to merit your approval of my "administration." At all events I shall give for the next twelve months the best that is in me to the service of the Association. I most gratefully appreciate and thank you for this expression of your confidence and for the honor you have done me. (Applause.)

The Chair is now ready for any further business before this meeting.

Dr. Hill.—*Mr. President,* I have the honor to present the first business before you. There is an old saying we should welcome the coming and speed the parting guest. I am sure we have welcomed the coming guest with all our heart. To speed the parting guest we have not quite finished our expressions. I move that we offer unanimously a vote of thanks to our retiring President for his courtesy, for his patience and efficiency in presiding over our deliberations.

I also move a vote of thanks to our retiring Secretary. The President comes and goes. The Secretary remains. We know our Secretary has been efficient for many years. We only part with him as Secretary with the idea of promoting him to higher office. He deserves the unanimous thanks of the Association for what he has done for us in the past.

The President-elect.—It gives me pleasure to put Dr. Hill's motion conveying as it does expression of the appreciation of the valuable services rendered the Association by two very efficient officers, Drs. Kilbourne and Pilgrim.

The motion was unanimously carried by a rising vote.

Dr. Kilbourne.—I thank you, gentlemen.

Dr. Pilgrim.—I thank you very much.

The President.—It gives me pleasure to announce the following Committees:

On Program: Dr. Arthur W. Hurd, Chairman, New York; Dr. E. E. Southard, Massachusetts; Dr. J. T. Searcy, Alabama; Dr. C. B. Burr, Michigan; Dr. J. H. McBride, California; Dr. N. H. Beemer, Ontario.

On Arrangements: Dr. William A. White, Chairman, Washington, D. C.; Dr. William L. Robins, Washington, D. C.; Dr. Oliver C. Brunk, Virginia; Dr. J. Percy Wade, Maryland; Dr. Henry A. Cotton, New Jersey.

This closes a very pleasant and successful meeting. I hope that it will be the pleasure of those in attendance here and many others to come to Washington next May and aid in making our sixty-sixth meeting a grand success. The Capital City people have always given us a very cordial greeting and treated us most hospitably, and they will doubtless do so again. But if they fail, remember Virginia is near by.

There being no further business, I declare this meeting of the Association adjourned.

Chas. W. Pilgrim,
*Secretary.*

## ANNUAL ADDRESS.

# MENTAL HEALING IN AMERICA.

By I. WOODBRIDGE RILEY,

*Professor of Philosophy, Vassar College, Poughkeepsie, N. Y.*

The history of mental healing in America falls into three periods: First, that of practice; second, that of perversion; third, that of revival. In this history the chief problem is to account for the neglect and decay of psycho-therapeutics in spite of the good start it had some one hundred and fifty years ago. Leaving out the peculiar religious faith healing sects like the Shakers, the Mormons and Restorationists, there were in general three schools who practiced drugless healing.

First and foremost were the Materialists of Philadelphia and the South. Followers of Hobbes and Hartley, of Darwin and Priestley, and consisting in the main of physicians, these pioneers emphasized the reciprocal influence of the physical and the psychical. As expressed by Provost Beasley, of the University of Pennsylvania, this meant that in every case in which there is performed an operation of the mind, there takes place, at the same time, a correspondent, correlative and consentient operation of the body.[1] Next there were the Immaterialists of New England and the North. Followers of Cudworth and Norris, of Berkeley and Edwards, these philosophers emphasized the principles of pure reason at the expense of the principles of physiology. Aiming to live like disembodied spirits they sought to cure the ills of the flesh by subjective factors of control. Descendants of ascetic Puritans they attempted to live on supersensible realities. Especially prone to extremes were those who betook themselves to Brook Farm, where, believing that the mind can create its own object, they neglected the cultivation of science for the cultivation of the self. Emerson himself said of this kind of Transcendental-

[1] Beasley: "Search of Truth," 1824, p. 451.

ism that it was the Saturnalia or excess of faith, wanting the restraining grace of common sense.

Given these two tendencies—eighteenth century materialism and nineteenth century idealism—into this wedge of diverging lines the occult mental healers thrust themselves. These were of two classes in so far as they leaned towards one or the other side, materialistic and idealistic. Among the former were the Mesmerists, the Phrenologists, the Electro-Biologists. Among the latter were the Spiritualists, the Christian Scientists, the New Thoughters. But as is often the case in the history of thought, where truth leads to perversion, prior to these occultists with their groundless pretensions and preposterous claims there were conservative men of science, who, like the academic successors of Mesmer, developed out of the magical beliefs of the day the real phenomena of hypnotism, hysteria and suggestion. Such in particular were the neglected colonial thinkers forming the materialistic school of Philadelphia and the South. Omitting for lack of space, Joseph Priestly, discoverer of oxygen and advocate of the homogeneity of man, his son-in-law and colleague, Thomas Cooper, of South Carolina, and Joseph Buchanan, of Kentucky, the remarkable teacher in the Transylvania Medical School,[2] we come to "the father of psychiatry in America."[3] It was Dr. Benjamin Rush, of Philadelphia, who was the first physician in the country to comprise psychology in the medical course. Addressing his first year students he said: "Diseases of the brain should be narrowly watched since they often produce discoveries of the secret powers of the mind; like convulsions of the earth, which throw up metals and precious stones, they would otherwise have been unknown for ever.[4] But Rush's anticipations of modern psycho-therapeutics may best be seen in three of his more formal works. Following his introductory lecture of 1760 "On the Utility of a Knowledge of the Faculties and Operations of the Mind," there appeared in 1786 his best known essay, the "Influence of Physical Causes upon

[2] Cf. chapters on these men in the writer's "American Philosophy: The Early Schools," 1907.

[3] W. Pepper: *Journal of the American Medical Association,* April 26, 1890, p. 6, note 2.

[4] Purnell MS. in Medical and Chirurgical Faculty Library, Baltimore, Md.

the Moral Faculty." Delivered before the American Philosophical Society, this essay contains the following striking passages:

"Do we observe a connection between the intellectual faculties and the degrees of consistency and firmness of the brain in infancy and childhood? The same connection has been observed between the strength as well as the progress of the moral faculty in children. Do we observe instances of a total want of memory, imagination, and judgment, either from an original defect in the stamina of the brain, or from the influence of physical causes? The same unnatural defect has been observed, and probably from the same causes, of a moral faculty. A nervous fever may cause the loss not only of memory but of the habit of veracity. The former is called amnesia, the latter unnamed malady will compel a woman, be she even in easy circumstances, to fill her pocket secretly with bread at the table of a friend.

"In venturing upon this untrodden ground the doctor confesses that he feels like Æneas when he was about to enter the gates of Avernus, but without a Sibyl to instruct him in the mysteries before him. He therefore begins with an attempt to supply the defects of nosological writers by naming the partial or weakened action of the moral faculty *micronomia,* its total absence *anomia.* But to name these derangements is not to explain them; they may be caused not only by madness, hysteria, and hypochondriasis, but also by all those states of the body which are accompanied by preternatural irritability, sensibility, torpor, stupor, or mobility of the nervous system. It is in vain to attack these accompanying vices, whether of the body or of the mind, with lectures upon morality. They are only to be cured by medicine and proper treatment. Thus the young woman, previously mentioned, that lost her habit of veracity by a nervous fever, recovered this virtue as soon as her system recovered its natural tone. Furthermore, it makes no difference whether the physical causes that are to be enumerated act upon the moral faculty through the medium of the senses, the passions and memory, or the imagination. Their action is equally certain whether they act as remote, predisposing, or occasional causes. For instance, the state of the weather has an unfriendly effect upon the moral sensibility, as seen in the gloomy November fogs of England; so does extreme hunger, as in the case of the Indians of this country who thus whet their appetite for that savage species of warfare peculiar to them. Again, the influence of association upon morals is strong. Suicide is often propagated by the newspapers and monstrous crimes by the publication of court proceedings. And as physical causes influence moral, so do they influence religious principles. Religious melancholy and madness will yield more readily to medicine than simply to polemical discourses or casuistical advice."[5]

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[5] Cf. the writer's address on Benjamin Rush, read at a meeting of the Johns Hopkins Historical Club, December 10, 1906.

It was in this same year that there appeared further illuminating articles of Rush. That on the "Different Species of Phobia and Mania," instanced among the former the cat-phobia and the solo-phobia, the phobia being excellently defined as the fear of an imaginary evil, or the undue fear of a real one. Among the latter are enumerated the land-mania which is especially prevalent in the United States; and liberty-mania, which shows itself in visionary ideas of liberty and government—when men expect liberty without law, government without power, sovereignty without a head, and wars without expense.[6] But it was in the year of the second war with England that Rush published the most important of his works, a work of such importance, indeed, that it deserves republication.[7] Two extracts from the "Diseases of the Mind," of 1812, will show the suggestive character of the book. Speaking of the way in which the will is affected by diseases, the author says there is first a negative affection, aboulia, or what he would call a debility and torpor, or [illegible] of all sensibility to the stimulus of motives. In this he says he has never been consulted, yet he has been informed by his friend Brissot that animal magnetism will cure light cases. He suggests, however, that persons afflicted with this disorder of the mind should be placed in situations, in which they will be compelled to use their wills, in order to escape some great and pressing evil. A palsy of the limbs has been cured by the cry of fire and a dread of being burned. Why should not a palsy of the will be cured in a similar manner?[8] Again, in upholding what he calls a system of Christian jurisprudence, Rush declares that it would be as absurd to inflict the punishment of death upon a fellow creature for taking away a life under a deranged state of the will, as for a surgeon to cut off an arm or a leg because in its convulsive motions it injured a toilet or overset a tea table. Now, while these morbid operations of the will may include in their consequences even theft

[6] *Columbian Magazine,* 1786-7, pp. 110-113, 177-180, 182-187, 305.

[7] The American Philosophical Association, through a special committee, of which the writer is acting-chairman, has recently issued an appeal for funds to republish characteristic works of our early American thinkers. Among these is Rush's "Diseases of the Mind." The reprinting of this work is cordially favored by the officers of the American Medico-Psychological Association.

[8] "Diseases of the Mind," pp. 268-270.

and murder, yet they are to be considered, not as vices, but as symptoms of a disease. Therefore, for persons thus afflicted legislators should abolish the punishment of death, cropping, branding, and public whipping, and substitute for them confinement, labor, simple diet, cleanliness, and affectionate treatment. As is shown by the moral effects thus produced in the jail of Philadelpia, the reformation of criminals and the prevention of crimes can be better effected by living than by dead examples.[9]

With such an illuminating work as that of Rush on the "Diseases of the Mind," why was it that this promising school of investigation failed? A general answer was because of the rivalry of the Realists or the Scotch School of Common-Sense Philosophy. Enemies of materialism they accepted as the safest pathway to reality Reid's first principles and Beattie's intuitive, immediate and irresistible impulses. So it came about that they preferred their own unaided introspection to the slow processes of inductive investigation and psycho-physical experimentation. Thus it was that Rush himself was held back by his orthodox realistic training at Princeton and Edinburgh and failed to carry out his principles to their logical conclusion. So too Thomas Jefferson was won over to the Scotch school by the personal influence of Dugald Stewart, although he had boldly stated "I am a Materialist," had agreed with Holbach that man was a machine, and had written to Cabanis that he agreed with his conjecture that the brain secretes thought. But we cannot find here the causes of the decay of materialism despite the aid of the President of the United States and the lectures of such able advocates as Buchanan in Kentucky, and Cooper in South Carolina. These things would lead into a politico-religious description of the times when "the philosophic chief of Monticello" was dubbed "such a heterodox and haughty fellow," and when the promising growth of materialism in the South was destroyed by the realism of the North, that movement which backed chiefly by Princetonians and Presbyterians came down like a glacier and ground out all opposition.

Here then ended the first period of the legitimate practice of mental healing in America. With the next period, that of perversion, we meet with those materialistic occultists who thought to bridge

[9] "Diseases of the Mind," pp. 365-366.

the gap between mind and matter by materializing mind. These in general were attracted by the doctrine of animal magnetism. Taking the *spiritus animales* of the old fashioned English corporealists like Thomas Hobbes, and combining with that doctrine the eighteenth century notions regarding the electric fluid, they obtained a composite elastic and electric fluid, which had a two-fold function. As an elastic fluid it was the medium of communication between the individual's brain and his body. As an electric fluid it could be projected beyond the limits of the individual, hence arose thought transference, clairvoyance, and mental healing, both local and long distance.

Animal magnetism first became known in America in an adverse way. Benjamin Franklin was one of the French Royal Commission of 1784 which investigated the claims of Mesmer. The report of that committee was to this effect: There is nothing in it. But that was a somewhat biased decision which ignored both the history and the significance of the movement. Mesmerism connected the medical theory of physical affluences and the magnetic-sympathetic system of medicine of the seventeenth and eighteenth centuries. As taught by the mystic Paracelsus, this theory was that there was a radiation from all things, but especially the stars, magnets and human bodies, of a force which would act in all things else and which was in each case directed by the indwelling spirit.[10] Given then these "beamy spirits which stream forth invisibly," Mesmer's peculiar service lay in his practical application of these mystical doctrines in the way of psycho-therapeutics. Where he showed his originality was in taking hold of the so-called universal radiating fluid and applying it to the sick by means of contacts and passes. Mesmer's claims were set forth in twenty-seven propositions ultimately derived from his Vienna thesis on the "Influence of the Planets in the Cure of Diseases." Of these propositions the following are pertinent: "A responsive influence exists between the heavenly bodies, the earth and animated bodies. . . . . A fluid universally diffused, so continuous as not to admit of a vacuum, incomparably subtle, and naturally susceptible of receiving, propagating, and communicating all motor disturbances, is the means of this influence . . . . The animal body experiences

[10] Cf. Binet and Féré: "Animal Magnetism," 1898, Chapter I.

the alternative effects of this agent, and is directly effected by its insinuation into the substance of the nerves . . . . In communicating any method, I shall, by a new theory of matter, demonstrate the universal utility of the principle I seek to establish. Possessed of this knowledge, the physician may judge with certainty of the origin, nature, and progress of diseases, however complicated they may be; he may hinder their development and accomplish their cure without exposing the patient to dangerous and troublesome consequences, irrespective of age, temperament, and sex. . . . This doctrine will, finally, enable the physician to decide upon the health of every individual, and of the presence of the diseases to which he may be exposed. In this way the art of healing may be brought to absolute perfection." [11]

Mesmer's doctrines obtained success since they were published at the psychological moment. The popular imagination was stimulated by recent discoveries such as Franklin's invention of the lightning conductor, for some scientific discoveries excite popular superstition by rendering the marvelous probable. Thus it was that Franklinism, or the theory of the electric fluid as a subtle, universally diffused fluid, indirectly fastened the belief in animal magnetism. Yet the American natural philosopher himself was anything but favorable to that belief. In fact his name heads the list of the royal commissioners whose report concluded as follows: "The commissioners have ascertained that the animal magnetic fluid is not perceptible by any of the senses; that it has no action, either on themselves or on the patients subjected to it. They are convinced that pressure and contact effect changes which are rarely favorable to the animal system, and which injuriously affect the imagination. Finally, they have demonstrated by decisive experiments that imagination apart from magnetism produces convulsions, and that magnetism without imagination produces nothing." [12]

These men were learned, but they missed an opportunity; in a word they threw out the baby with the bath. Confused by Mesmer's complicated apparatus of tractors and *baquets magnetiques,* they failed to perceive the true principle of suggestion at the

[11] Binet and Féré: "Animal Magnetism," pp. 5-7.
[12] Binet and Féré: "Animal Magnetism," pp. 16-17.

bottom of all that rubbish. They were right in denying any such objective entity as a transferable curative principle; they were wrong in denying the correlative subjective principle, namely that through suggestion the subject may regain his nervous stability, relieve himself of mental overtension, and so tone up the system as to hasten the process of cure even in organic troubles.

Animal magnetism in America received one black eye at the hands of Franklin. It received another with the advent of the Scotch realists, especially of the Princeton school. The first of these was John Witherspoon who, as president of the College of New Jersey, delivered the opinion, that, while the body and spirit have a great reciprocal influence upon one another; the body on the temper and disposition of the soul, the soul on the state and habit of the body, yet the body is properly the minister of the soul, the means of conveying perceptions to it, but nothing without it. Other Princetonians repeated these opinions, but how they spread to the North and South is another story. As Jefferson said, the pious young monks of Harvard and Yale who came into the Valley of Virginia were too much for him; hence he had no desire to thrust his head into that hornets' nest, the *genus irritabile vatum.*

With two black eyes, one from the practical Franklin, and the other from the Scotch School of Common-Sense, animal magnetism was not fit to appear in public for some time. Nevertheless with another generation it was again introduced into the country in a fashion that can best be traced through its connections with primitive Christian Science. It was in 1837 that a Frenchman, Charles Poyen, who had been cured "mesmerically" of a nervous disorder, published his "Progress of Animal Magnetism in New England." In this he tells of his travels in the very towns of Massachusetts, Maine and New Hampshire, where Mrs. Mary Baker Glover Eddy later lectured and practised. That she was conversant with what he taught is likely from the similarity between his six mesmeric phenomena and the elements of her teaching. His "suspension of the external sensibility" was her "unconsciousness." His "intimate connection with the magnetizer" was her "mesmeric connection between you both." His "influence of the will" was her "will power." His "communication of thought" was her "absent treatment." His "clairvoyance" was her belief that "the mesmerized subject sees with

closed eyes." His "faculty for seizing the symptoms of disease and prescribing the proper remedies for them" was what she meant by "healing the sick without seeing them."

In the same year as Poyen's book came Durant's "Exposition, or a New Theory of Animal Magnetism with a Key to the Mysteries." In this animal magnetism is declared to be a "branch of electricity" a science which gives a new life to the religious principle (furnishing unconquerable weapons to Christianity against materialism), creates a new method of pathological investigation and settles therapeutics on a basis hitherto unknown to the medical world." Within another generation an Americanized form of mesmerism—Dr. Grimes' electro-biology—was known to high and low. The poet Whittier was familiar with it, while Mrs. Eddy wrote in the Portland *Courier* of 1862 as follows: I have employed electro-magnetism and animal magnetism, and for a brief interval have felt relief from the equilibrium which I fancied was restored to an exhausted system, or by a difference of concentrated action, but in no instance did I get rid of a return of all my ailments, because I had not been helped out of the error in which opinions involved me." This confession has been used by the opponents of Mrs. Eddy in the attempt to prove that she stole her doctrines from the Portland magnetic healer Quimby. At first sight Eddyism might seem to be nothing but Quimbyism. He taught a "Science of Health"; she wrote "Science and Health": both employed the term "Christian Science." Again Mrs. Eddy has her "reversed statements," propositions which are offered as self-evident because they read backward. She propounds this concatenation: "There is no pain in Truth, and no Truth in pain; no matter in mind and no mind in matter; no nerve in Intelligence and no Intelligence in nerve; no matter in Spirit and no Spirit in matter." Similar patent reversibles are to be found in Quimby's "Science of Man": "Error is sickness, Truth is health; Error is matter, Truth is God; God is right, Error is wrong."

Finally there are many points of resemblance between Quimby's Portland circular of 1859 and Mrs. Eddy's defence of his system in 1862. The former alleged, "My practice is unlike all medical practice. . . . I give no medicines, and make no outward applications, but simply sit by the patient, tell him what he thinks is his disease, and my explanation is the cure. If I succeed in cor-

recting his errors, I change the fluids of his system, and establish the truth or health. *The truth is the cure.*"

Mrs. Eddy's apology for her master ran thus: "My operator believed in disease independent of the mind; hence, I could not be wiser than my teacher. But now I see dimly at first, and only as trees walking, the great principle which underlies Dr. Quimby's faith and works; and just in proportion to my right perception of truth is my recovery. This truth which he opposes to the error of giving intelligence to matter and placing pain where it never placed itself, if received understandingly, changes the currents of the system to their normal action; and the mechanism of the body goes on undisturbed. That this is a science capable of demonstration becomes clear to the minds of those patients who reason upon the process of their cure. The truth which he establishes in the patient cures him."

But it is needless to go further into this muddy question of plagiarism. There is no real issue between the Eddyite and the Quimbyite, because the head of each school drew their philosophic trickles from a common source. One of the chief ex-Christian Scientists himself grants that there was a near approach to the theory and practice of Dr. Quimby in the contemporary investigation of John Bovee Dods, who believed that electricity was the connecting link between mind and matter, that disease originated in the electricity of the nerves and can be cured by a change of mind. Turning to the 1851 edition of Dr. Dods' book, the "Philosophy of Electrical Psychology," there can be found passages reflected in both the writings of Dr. Quimby and Mrs. Eddy. Thus the former was said to change the "currents of the system to their normal action," while the latter asserted that electricity is the essence of mortal mind, the least material form of consciousness.[13]

Dr. Dods' name has a curious interest enabling us to trace the connection between the perversion and the revival of mental healing, for it was through his contemporary and colleague "old Doctor Grimes" that there was brought about a sort of anticipated Emmanuel movement. Grimes, the promotor of "Electro-Biology" had as a pupil one Andrew Jackson Davis, the "Pough-

[13] From the writer's article, "The Personal Sources of Christian Science," *Psychological Review,* November, 1903.

keepsie Seer." It was Davis who published in 1851 the following statement: "Clergymen would advance mankind to happiness and true religion if they would impress upon their congregations those indispensable truths which the soul most of all things requires. The philosophy of anatomy, physiology, chemistry, mechanism, electricity, magnetism and psychology, are *not* too material and worldly to be preached from the pulpit on Sunday." [14]

With what a distinguished French psychologist has called the incredible mixture of religion and medicine in America,[15] the eclipse of legitimate psycho-therapeutics was complete. It was, therefore, not until another generation that there arose the advocacy of its claims on the part of professional men of ability and acknowledged standing. As another has said, unjustifiable scepticism and neglect were the natural consequences of extravagance, perversion and charlatanism. If as late as 1874 Dechambre in his "Medical Encyclopaedia" declared that all the phenomena of hypnotism rest upon self deception and illusion, it is not surprising that comparative neglect met that early American contribution to the study of trance states, published by Dr. G. M. Beard in 1881.[16]

Of these chaotic conditions during the last quarter of the last century a more thorough study than is here allowable should be made. Meanwhile it may be pointed out that similar conditions threaten to arise with the advent of the so-called Emmanuel movement. In this movement we may point out but these four elements, its start, and spread; its safeguards, and its dangers. According to the official hand-book, the movement was started in November, 1906, in a series of Sunday night talks in Emmanuel Episcopal Church, Boston. The rector of this church, Dr. Elwood Worcester, with his assistant Dr. Samuel McComb, give this as the substance of their doctrine: The power of mind over matter; the control of physical disabilities where such disabilities are influenced or caused by the mind; the easement of the mind itself, all superinduced by an abundance of faith. No new dogmas are imposed upon the believers in Emmanuel; their prayers and their faith are combined with the efforts of sound scientific help. Its basic principles are founded on three agencies: First, moral reedu-

[14] "The Great Harmonia," 1851, Vol. 1, p. 225.

[15] Prof. Pierre Janet, in a conversation with the writer, November 20, 1906.

[16] Cf. Joseph Jastrow: "Fact and Fable in Psychology," 1900, p. 227.

cation; second, waking suggestions; third, spiritual hypnosis. The most menacing disorders that the movement undertakes to cure are melancholia, moral fatigue, hysteria, suicidal mania, psychopathia sexualis, kleptomania and psycho-neurosis. The foundation of all these diseases may be expressed in this one idea: "Deadly poison lies in evil thoughts which the most searching drugs are powerless to reach." [17]

Of the spread of this movement little need be said because much was to be expected. Following in the wake of orthodox Christian Science and advancing into the broader areas explored by the so-called New-Thought, Emmanuelism in two years reached from Boston to Brooklyn, from Philadelphia to Denver. But what were the safeguards in the utilizing of this powerful force? At the beginning of the movement it was ruled that before coming under the treatment of Emmanuelism the patient must be examined by a regular practicing physician, and if his trouble was organic, he must be turned over to the surgeon. At the outset a diagnosis as thorough as that given at the Massachusetts General Hospital was required, but latterly there has been a tendency for the doctor of divinity to do without the services of the doctor of medicine. This led to such articles as that in the *New York Medical Journal* of December, 1908, which brought there four points of criticism against the movement: That Emmanuelism is nothing but New-Eddyism; that it makes the clergy irregular physicians, and, therefore, illegal practitioners; that it leads the ignorant to trust the amateur rather than the professional; finally that if patients confide in the clergymen for healing, why should they not confide in the lawyer whose services are equally confidential? Against these four points the leaders of the movement made reply to the following effect: First, that Emmanuelism is not an after-clap of Eddyism, that it is more witty than wise to call it "Christian Science with Worcestershire sauce"; second, that such leading churches as those of Boston, Northampton and New York require a certificate of medical examination; third, that it is not the ignorant but the intelligent that require the higher psychic treatment; and, finally, as the *Medical Journal* itself acknowledges, without the clergy mental healing would lose the powerful therapeutic forces that reside in religion.

[17] McComb and Worcester: "Religion and Medicine," 1908, passim.

These are the replies given by the Emmanuelists. But it should be noted that they do not fully deal with the difficulties inherent in any mystical system of faith healing. In the first place there is too much demanded of the so-called subconscious self. In the official hand-book the following claims are made for that overworked faculty: That it carries on the automatic functions of the body; that it contains the *vis mediatrix naturae;* that in it inheres a flawless memory; that it is the organ of genius; finally, that it is more sensitive to good than to evil. Here indeed is the deification of a dubious faculty; in its claims it is like a general electric company, which supplies light, heat and power. With such mystical and wide reaching claims it is hardly probable that Emmanuelism will meet the requirements of the scientist, or that it can lead to a revival of legitimate mental healing in America unless by indirectly stimulating the public. Of course that public is anything but ignorant, for the class to which this medico-religious movement appeals is not the submerged tenth, but the neglected ten thousand. Here it would be interesting to show an increasing scale of intelligence, as this public has emerged from the twilight of the newer New Thought, and has passed in succession through such works as Hudson's "Laws of Psychic Phenomena," Trine's "In Tune with the Infinite" and William James' "Energies of Man." All this betokens not so much a diluted Christian Science as an inchoate immaterialism. Whether such a tendency can be utilized towards a legitimate psycho-therapeutics depends largely on the medical fraternity. If, as is to be hoped, the legitimate practitioner is to monopolize mental healing, what is to supply the necessary element of faith? The educated classes in America know comparatively little of the possibilities of suggestive therapeutics; if the profession put little trust in that form of treatment, how should the laity be expected to believe in the adequacy of second causes without the implication of a supernatural first cause, such as the so-called sublimal self? It remains for an association such as this to educate the public, to lead them from their blind worship of the magical in medicine, to substitute for a supernormal subconsciousness the principle of psycho-physical parallelism, and thus to revive that doctrine of the early American school of mental healing, that there is a coordinate value in the study of mind as well as body.

# THE CYCLIC FORMS OF DEMENTIA PRÆCOX.

By WILLIAM RUSH DUNTON, JR., M. D.,
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In a paper read before the American Medico-Psychological Association in 1907,[1] I drew attention to certain forms of dementia præcox which had been described by De Sanctis, Dercum, and others, and I feared at the time that I might be accused of having a classifying mania. My friends have been too considerate to make this charge concerning me, but I may run some further risk with my present paper. Perhaps the statement of my belief that the dementia præcox group is susceptible of much further division may be an excuse for the advocacy of another form.

During the past winter in one of our staff conferences Dr. Cornell applied the term cyclic dementia præcox to the case then under discussion and this seemed to me to aptly describe certain cases which I had mentally grouped and I therefore have adopted it. So far as I know its use is original with Dr. Cornell. It will perhaps be best to first give abstracts of these cases in order that it may be clearly understood what is included by the term, and especially as I am fully aware that there may be some who will disagree with my diagnosis.

The first two cases (Case 1, No. 541, and Case 2, No. 547) which I wish to bring to your attention have so recently been reported by Dr. Barnes[2] that I shall not give abstracts but will merely call attention to the fact that while for a number of years they were regarded as typically cases of *folie circulaire,* which I believe is generally included in the maniacal-depressive group, yet there has been a gradual change and the excitement has become less typically maniacal; there has been a less marked flight of ideas and in the woman evidences of stereotypy, while in the man the excitement has been replaced by periods of mutism and catatonic rigidity.

[1] The Forms of Dementia Præcox. Proceedings, 1907.
[2] American Journal of Insanity, Vol. LXV, p. 559, April, 1909.

There is undoubtedly mental deterioration in both of these cases, which was not present in the only other case of circular mania which I have observed over a considerable term of years. Here the cyclic course is undoubted and the only point on which disagreement may occur is whether they may be properly placed in the dementia præcox group. A close study of their symptoms makes such disagreement unlikely. The course of these cases is best shown by the annexed charts, 1 and 2, which illustrate the duration of the abnormal and normal periods of these cases for a part of the time which they have been under observation.

Case 3, No. 1295, is a man, single, aged 23, who was admitted to the Sheppard Hospital, July 6, 1905.

His family history is negative as is his personal history. He was of a quiet, even disposition, and that he had considerable mental ability is shown by his being one of 12 out of 170 who passed a civil service examination in 1903. At times he complained of his work as stenographer being hard. It is said that two months before admission he was told by a physician that he had heart trouble and should get on a drunk for it. This frightened him and he consulted a life insurance examiner who told him his heart was normal. The first mental symptom noted was the expression of grandiose ideas to his father on June 15, 1905, he declaring that he would be Secretary of State, that he was to negotiate a treaty of peace between Russia and Japan (these two countries having then suspended hostilities), and on this day he sent a telegram to the Papal representative at Washington, concerning the peace negotiation. From the beginning there has been a cyclic course, several days of excitement being followed by several days during which he was rational. He has shown some insight.

Soon after admission he became so impulsive as to necessitate his removal to the disturbed ward. He showed many religiose delusions, fewer grandiose, also visual, tactile, and auditory hallucinations. On September 21, he was transferred to a quieter ward and on this day admitted that all of his delusions were unreal. On October 1, he became noisy, saying he shouted because some one told him to do so, and this condition lasted until October 10, when he again showed good insight. A less severe attack lasted from October 24 to 31, and in the attacks which followed it was

noted that they began with elation and refusal of food, then came a condition of confusion after which he would gradually become clear and his insight would return. Ordinarily much interested in baseball and playing a good game, when confused he would have nothing to do with it. After showing a slight improvement he was discharged on a trial visit home February 9, 1907, and has remained there ever since. During the greater part of this time he has had attacks which are described by his physician as follows:

The stuporous condition usually begins the latter part of the month, about the 20th or 23d, preceded by a mild exaltation, the patient becoming talkative and somewhat restless, followed within a few hours by a stuporous, negativistic condition, during which he will not talk, is unable to attend to his usual occupation, and sits in his room unresponsive in every way. During this period he eats and sleeps as usual. This period usually lasts from ten days to two weeks, and recovery is noted by the patient becoming more aggressive, agitated (psycho-motor restlessness), and at times has struck his father or sister. Within a few hours the patient has regained his normal self and returns to work. Between the attacks the patient is bright, industrious, and to the casual observer is perfectly normal.

During the depressed period the patient will sit in a chair for hours at a time with a silly grin, holding a book on his lap and repeating silly phrases over and over again. He will oppose any passive motion and refuses to talk. He has a clear recollection of all that transpired during the period and is able to relate incidents that occurred.

It will be noted that the word depressed is above used to qualify the abnormal period, and for a considerable period after his discharge from the hospital his physician was of the opinion that he was suffering with a *folie circulaire*. In our opinion, however, the patient showed some mental deterioration at the time of his discharge. I recently saw the patient for a few moments and noted that he had changed considerably in physical appearance. Our conversation being limited to ordinary greetings was not of a nature to bring out any mental symptoms but his manner was not suggestive of any mental disturbance. He was asked to write an account of illness and sent the following:

Dear Doctor: In accordance with your request to the best of my knowledge hereby state as to periods of unconsciousness and cataleptic state duration of same.

Since I have been out of asylum, Feb. 1, 1907, 8 months succeeding each month a slight indisposition and one or two exaggerated affairs during the

whole period. Since about Oct. 15, '08, until now, a bad period every month always of either 10 or 14 days duration induced by almost every attack by disagreement with same on some usually trivial subject this state of mind acting adversely on the condition of my head. I add at no period of this time have I been able to study speedy short hand work on account of these interferences. At the time I was under your care, as I then reported, these periods extended from about 12th or 14th of each month until 24th or 26th. Gradually the period has changed, the attack consistently occurring almost to a day (for the last 6 months on the 20th and lasting until the 2d or 4th of the following month. Last month (May) shifted to the 25th, but it was the same period of duration, 14 days. Respectfully,

R. E. O'Mara.

This last case and the two previously reported by Dr. Barnes show typically the cyclic character of the disorder. The character of these periods is similar in the three cases there being first a period of excitement in which an element of confusion is present, this last increasing as the excitement subsides until finally a stupor occurs from which the patient gradually emerges. The woman has shown this cycle more consistently than have the other two and shows but little variation in the character of her abnormal periods from those which she had years ago with the exception that they are apparently becoming longer. During the early excitement, which does not suggest that of manic-depressive insanity, there is a good deal of stereotypy shown by her singing the same phrases over and over and by the repetition of "this, this, this" very constantly, as well as other phrases not so constantly. An example of her production has been given by Dr. Barnes, but for comparison is reproduced here, it representing 8 minutes spontaneous production: "Sign yourself, sign yourself (laughs), nothing, nothing, nothing. Yes, you do it yourself, do it yourself. How many more? How many more of them? How many more are there? I am tired of these things (blood smears were being made)—my father took it out—eight o'clock—no, nothing. What's that in your mouth? (blood pipette). Transactions—put that in your mouth. Can you see? Who is this? I don't know. How many more is there? How much of that trash have you got there? How many more of them? I will get up on the stage. How many more of them are there? How many more? How is your stomach (laughs)? Blue flag (looking at physician's blue necktie—laughs) yes, yes, yes (laughs), good-bye (this to the

nurse who leaves the room). (Q. Are you happy now?) perfectly." In the man, Case I, the attacks formerly always began with logorrhœa, an example of which taken in 1905 by Case III, who, it will be remembered, was a stenographer, is as follows and represents the spontaneous production for one minute: "Moss was the name of a colored employee on the Light-house Board. Moss attempt—got most of it—and he is a damned lie, because—look here. I cannot be beat with, I can't go out with, and if I'm not working after that—what the—he work with—he crack—doing the wrong kind of business on the ground and a coffin nail is gone. Such things and you have got to get like little babies and suck your nose, but they going off so of these days themselves, that is all right, bees and you." The above is very similar to that noted by Dr. Barnes in 1908, and in all of these we note there is marked dissociation.

Case III also showed a logorrhœa in the initial stage of the abnormal period but less markedly than the others and frequently taking the form of writing. I regret that I have no record of his speech but the following is a copy of two pages of note paper written by the patient and illustrates the character of such logorrhœa as well as his ideas:

The Sabbath day was Friday, August 18, 1905.
Robert Emmett O'Mara[3] is the Pope of the Holy Catholic Church.
H. S. Barter[4] is a Cardinal.
Rev. T. H. Barter[4] is a Cardinal.
Zink[5] is a Cardinal.
Merry del Val is a Cardinal.
Merry del Val is Papal Secretary of State.
Lewis Weber[5] is a Bishop of the Holy Catholic Church.
Walter Elmer is a Bishop of the Holy Catholic Church.
This is [scratched] Tuesday, August 20, 1905.
The Pope is the servant of God on earth.
The Papacy of the Holy Catholic Church cannot be transferred.
(Second page.) The Sabbath is the day of God.
There are 10 Commandments of God.
1. Thou shalt not have strange gods before thee.
2. Thou shalt not take the name of God in vain.
3. Remember thou keep holy Sabbath day.
4. Honor father and mother.
5. Thou shalt not kill.

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[3 4 5] These indicate names which have been altered from the original, [3] being the patient, [4] former friends and [5] fellow patients.

6. Thou shalt not commit adultery.
7. Thou shalt not steal.
8. Thou shalt not bear false witness against thy neighbor.
9. Thou shalt not covet thy neighbor's wife. Thou shalt not covet thy neighbor's goods.

Jesus Christ was a man. The spirit of God that was God at the time of Christ took [scratched] possessed the body of a man, Jesus Christ, of the house of David, and thus he was called the Son of God.

The prophecy which came to Robert Emmett O'Mara at 411 U St., N. W., Washington, D. C., was a prophecy of God that is. Lucifer is God.

Since 1907 the character of the attacks in Case I has changed, he first going into a period of mutism in which he shows marked flexibilitas cerea from which he gradually passes into a state in which the flexibilitas is replaced by mere resistiveness, this latter now being characteristic of the beginning of an abnormal period. He may, however, on the second day show excitement and logorrhœa of a milder character than that previously exhibited, which may endure for several days, after which he passes into a stuporous condition. Both of these cases rarely showed some irregularity in their course, such as a day, or even a few hours of excitement appearing abruptly during the period of stupor, or a similar period in which the patient was apparently normal. The woman, Case II, has more recently shown a tendency at times to pass from the state of stupor to that of excitement of the usual duration so that it would appear that the normal period would be omitted. At one time it was suggested that the patient's attacks were epileptic in character and she was given a drachm of bromide daily for two months, January and February 1905, with the result that she at first had an unusually long normal period, but later her normal periods were very short and this condition lasted for about eight months after the discontinuance of the drug. While on the bromides the excitement was less marked than usual. This may be seen indicated on the chart.

In studying the chart of Case I, we find that in 1902, the first year shown, that he had 258 abnormal days to 107 normal; in 1903, 179 abnormal to 186 normal; in 1904, 209 abnormal to 157 normal; in 1905, 219 abnormal to 146 normal; 1906 is omitted being incomplete; in 1907, 221 abnormal to 134 normal, and in 1908, 239 abnormal to 127 normal. This shows an increase in the number of abnormal days since 1903, but has not yet reached the

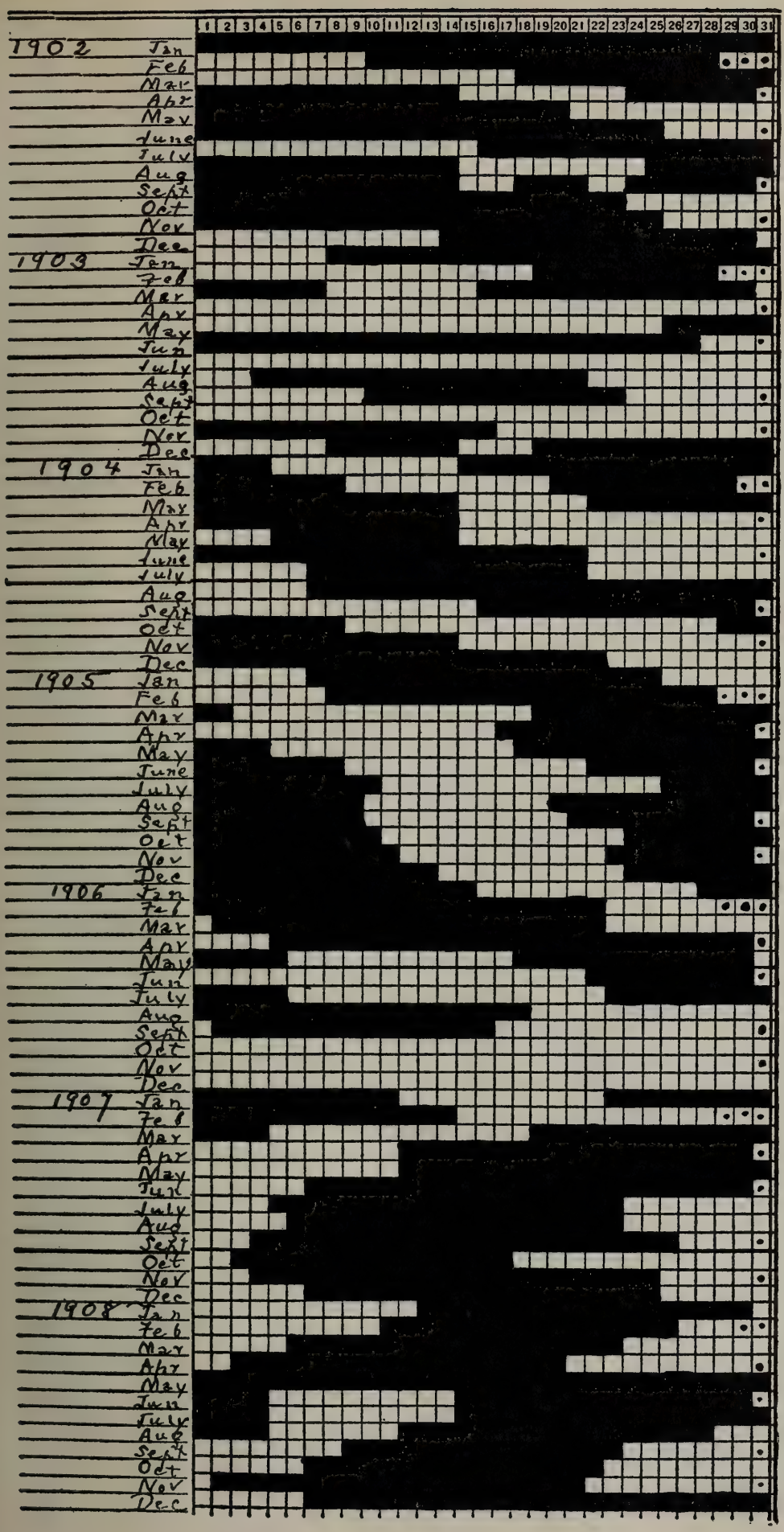


CHART I.—Showing in black abnormal periods and in white normal periods of Case 541. A dot indicates no day. Records for the last three months of 1906 are not accurate.

number of 1902, so that it is doubtful if it can be correctly said that the fact that the number of abnormal days is increasing is an indication that the disease is progressing more rapidly, or indeed, if in this case the above figures indicate anything more than what they actually show, that is, the number of abnormal and normal days. The same may be said of a study of the duration of these periods, as may be seen from the following figures: In 1902 this patient had 11 abnormal periods of 35, 19, 28, 27, 25, 30, 22, 4, 30, 25, and 16 days, or an average of 23 days. There were 10 normal periods for the same time of 9, 17, 8, 10, 20, 9, 3, 2, 8, and 18 days, or an average of 10 days. In 1903 there were 9 abnormal periods of 23, 16, 14, 33, 18, 15, 16, 7, and 17 days, an average of 16 days, and 9 normal periods of 8, 18, 8, 56, 36, 17, 37, 21, and 4 days, an average of 22 days. In 1904 there were 10 abnormal periods of 24, 24, 24, 10, 21, 15, 25, 23, 17, and 22 days, an average of 20 days, and 11 normal periods of 10, 11, 7, 20, 17, 15, 16, 15, 20, 16, and 15 days, an average of 14 days. In 1905 there were 12 abnormal periods of 19, 23, 13, 18, 22, 20, 15, 21, 20, 19, 21, and 23 days, an average of 18 days, and 11 normal periods of 13, 16, 16, 13, 12, 15, 10, 11, 13, 11, and 10 days, an average of 13 days. In 1907 there were 12 abnormal periods of 23, 5, 13, 19, 20, 24, 17, 18, 23, 16, 21, and 18 days, an average of 18 days, and 13 normal periods of 11, 13, 14, 11, 11, 6, 4, 13, 11, 6, 16, 12, and 19 days, an average of 11 days. In 1908 there were 11 abnormal periods of 18, 16, 18, 18, 35, 20, 21, 17, 15, 16, and 20 days, an average of 19 days, and 12 normal periods of 19, 11, 7, 10, 10, 10, 10, 7, 11, 13, 10, and 15 days, an average of 11 days. It would appear that the only conclusion which might be drawn from the above is that there is a tendency for the normal periods to become more uniform in duration. The seasons apparently have no influence upon the duration of either the abnormal or normal periods.

From the chart of Case II, in 1902, the first year shown, the patient had 257 abnormal days to 108 normal; in 1903, 237 abnormal to 128 normal; in 1904, 235 abnormal to 131 normal; in 1905, 291 abnormal to 74 normal; in 1906, 262 abnormal to 101 normal; in 1907, 253 abnormal to 112 normal, and in 1908, 265 abnormal to 100 normal. Here again, we see an increase in the number of abnormal days. As to the duration of the abnormal and normal periods, in 1902 this patient had 13 abnormal periods of

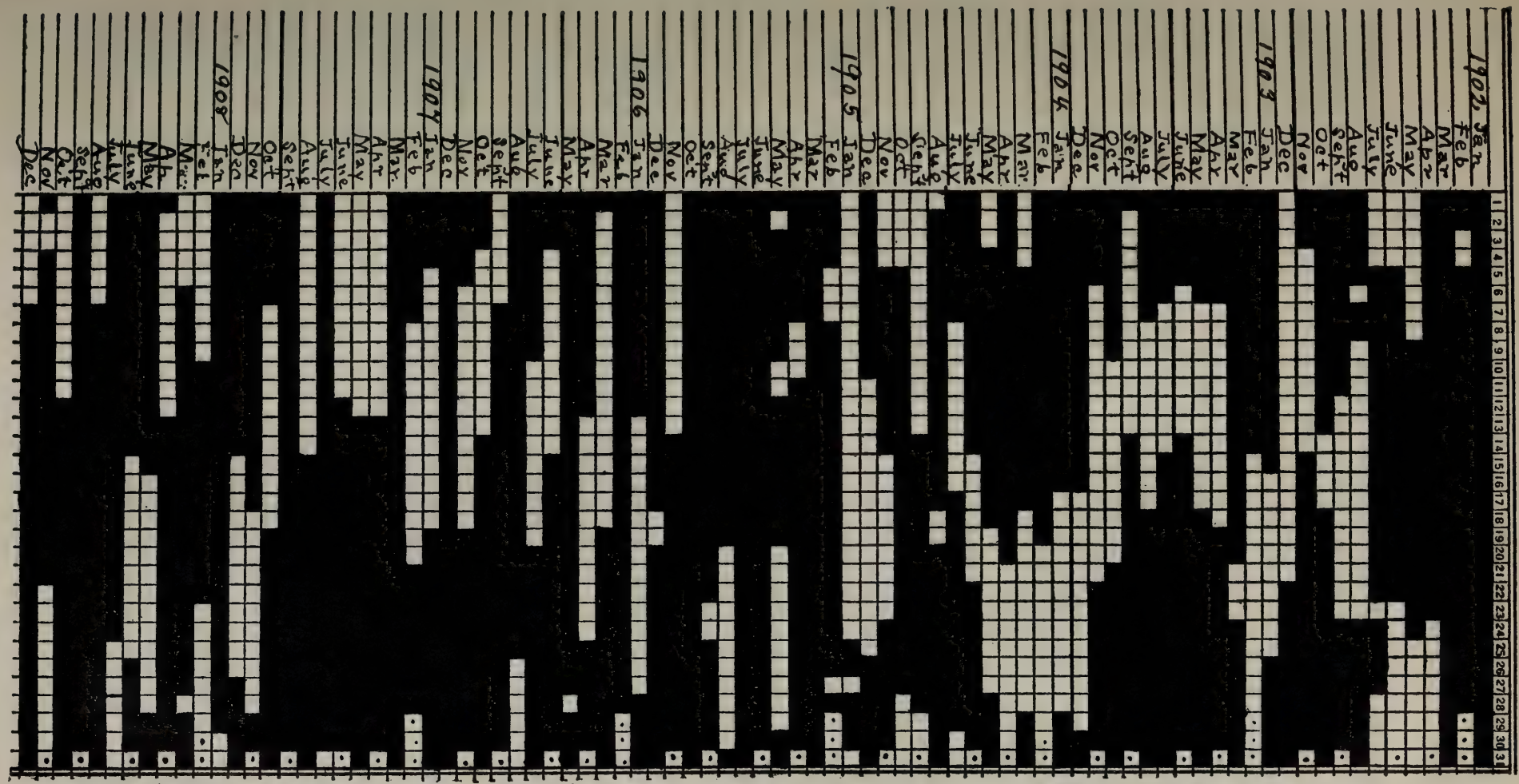


CHART 2.—Showing in black abnormal periods and in white normal periods of Case 547. A dot indicates no day.

33, 78, 16, 18, 18, 4, 5, 2, 19, 20, 17, 16, and 25 days or an average of 21 days, and 12 normal periods of 2, 15, 11, 12, 1, 4, 1, 15, 11, 4, 11, and 21 days, an average of 12 days. In 1903 there were 14 abnormal periods of 20, 20, 14, 18, 19, 23, 24, 15, 26, 16, 25, and 18 days, an average of 17 days, and 14 normal periods of 10, 14, 3, 12, 11, 8, 8, 10, 12, 11, 16, and 13 days, an average of 9 days. In 1904 there were 14 abnormal periods of 22, 13, 23, 15, 18, 16, 13, 16, 12, 15, 23, 10, 17, and 6 days, an average of 15 days, and 14 normal periods of 12, 14, 11, 13, 9, 7, 9, 3, 2, 13, 6, 8, 9, and 15 days, an average of 9 days. In 1905 there were 11 abnormal periods of 6, 4, 58, 22, 7, 8, 82, 23, 37, 34, and 24 days, an average of 27 days, and 11 normal periods of 24, 1, 3, 3, 1, 2, 10, 11, 2, 13, and 2 days, an average of 6 days. In 1906 there were 9 abnormal periods of 33, 25, 33, 6, 25, 36, 27, 23, and 47 days, an average of 28 days, and 9 normal periods of 15, 17, 12, 1, 11, 10, 12, 10, and 13 days, an average of 11 days. In 1907 there were 9 abnormal periods of 20, 39, 18, 19, 48, 52, 30, 16, and 34 days, an average of 30 days, and 10 normal periods of 14, 13, 12, 12, 11, 15, 12, 11, 12, and 11 days, an average of 12 days. In 1908 the last abnormal period is not included, as besides 25 days of December it extended into February, 1909, so that exclusive of this there were 9 abnormal periods of 13, 22, 4, 33, 17, 35, 55, 21, and 18 days, an average of 27 days, and 9 normal periods of 12, 1, 11, 13, 11, 13, 11, 2, and 15 days, an average of 9 days. From the above figures it would appear that there is a tendency for both the abnormal and normal periods to become more uniform in duration.

Case III, it will be remembered, was the only one which was observed in the beginning of the psychosis, and since his discharge he has shown the cyclic character of his psychosis more markedly than while under care here. Chart 3 shows the abnormal and normal periods while in the Sheppard Hospital and there is nothing about it essentially different from charts 1 and 2. I have not charted the abnormal periods since discharge, as there is no record apparently more accurate than the patient's own, and from this we do not know the times when changes in the dates of onset occurred which seems the chief point requiring charting. Neither have I made comparison of the abnormal and normal periods as I have done above, as this case was under observation during the

most irregular part of his psychosis and not of sufficient length of time to give much value to any comparison.

These three cases seem to me to be sufficiently unique to warrant their being grouped by themselves. I have no doubt that others have observed similar cases and like myself have at first grouped them as *folie circulaire*. I do not believe that they should be so grouped, however, and would reserve that category for cases which show more typically maniacal symptoms and which do not dement. The term cyclic dementia præcox seems to me to well describe this form. It is interesting to speculate on the relationship between the maniacal-depressive group and the dementia præcox

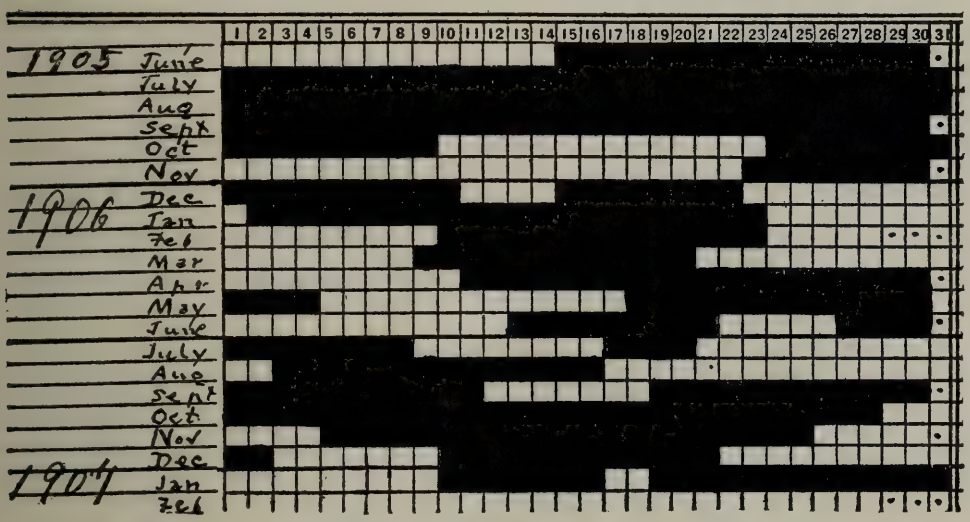


CHART 3.—Showing in black abnormal periods and in white normal periods of Case 1295. A dot indicates no day.

group which is suggested by these two sub-groups of *folie circulaire* and cyclic dementia præcox but I feel that at present any remarks on the subject would be purely speculative, so that it is best to refrain from making any.

That cases of dementia præcox show a periodical exacerbation of symptoms is well known and has been commented upon by many writers, the same characteristic being shown by cases of maniacal excitement, but this is different, from the changes shown by these three cases where we have a totally different normal and abnormal period. If we turn to Kahlbaum's original description of catatonia we find as follows: Catatonia is a brain disease with cyclic changing course in which the psychic symptoms presented

in order are melancholia, mania, stupor, confusion, and finally dementia, of which psychic symptoms one or even more may be absent, and in which besides the psychic symptoms the occurrence of those in the motor nervous system having the general character of cramps appears as an essential symptom.[6] It can readily be seen that the above cases correspond to the description of Kahlbaum in that they have a periodic course of excitement, confusion, and stupor followed by a remission, but in all of these cases the characteristic motor symptoms were late in appearing, in Case I not until 17 years after onset. It is doubtful also if Kahlbaum had in mind any case similar to these, as it appears most likely that he would have considered them, just as we first did, as belonging in the group of cases described by Falret and Baillarger as *folie circulaire.*

In conclusion, I would say that I am of the opinion that we are here dealing with a unique form of dementia præcox apparently closely allied to that form of maniacal-depressive insanity known as *folie circulaire,* and that it seems to point to a middle ground, or connecting link between the maniacal-depressive group and the dementia præcox group.

As a definition I would offer the following: Cyclic dementia præcox is a form of insanity closely resembling *folie circulaire* in that there are frequently recurring abnormal periods of excitement and stupor, these abnormal periods being succeeded by normal periods, usually of briefer duration. While at first the excitement may seem to resemble that of maniacal-depressive insanity, closer study will show that there is no true flight of ideas, and there is usually evidence of stereotypy. Muscular rigidity, flexibilitas cerea, or hypertonus is also present and motor restlessness may be slight. The stupor does not resemble that of maniacal-depressive insanity and is also characterized by muscular rigidity. In the normal periods the patient may for a long time give little evidence of dementia and merely show the narrow mental horizon of a person who is cut off from active life, but after several years dementia may be apparent, as a rule an emotional dulling being shown before an intellectual one.

[6] Kahlbaum, Dr. Karl. Klinische Abhandlungen über Psychische Krankheiten. I. Die Katotonie. S. 87. Berlin, 1874, August Hirschwald.

# THE INSANITY DEFENSE FOR CRIME.

By JOHN B. CHAPIN, M. D., Philadelphia, Pa.,
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At a meeting of the Pennsylvania Association of Hospital Officers, it seemed to be an opportune occasion to call attention to some of the changes in recent years in the views and dicta held by the courts on insanity as a defense where crime was charged. On the occasion referred to, not only were physicians interested in a trial notable in many respects, but the community and the press engaged in discussions of the various and varying aspects of the crime that had been committed. It was not the first instance where a criminal act perpetrated by an obscure person, who might otherwise have made no contribution whatever to science or the elucidation of any legal problem, became an unwilling and unintentional center of a psychological storm. It seemed also an opportune occasion for an attempt to enrich and illumine (?) our already overloaded nomenclature by a term for which the lexicons of the dead languages have thus far not been equal to furnish a scientific explanation. Perhaps if a more comprehensive name were desired, "modern insanity" might be used to stand for all forms not otherwise now classified or that may be discovered hereafter. Yet, if it is thought a classical term is to be preferred and is essential, the puzzle may be solved by the use of the term *psycho-typhosis,* "although the good old Greeks did not have the thing."

In reference to the paper which has been referred to, a number of cases were cited showing the tendency of the judicial mind to modify the rigor of the opinions of the courts of an earlier day. Perhaps sufficient stress was not in those days laid on the instruction of the courts to jurors to give to the defendant the benefit of any and every doubt as to his mental state. If the courts of later years have been correct in their views, and there is no intention to question their justice, it is clear that counsel have had an

immense advantage in the defense by calling a number of experts who, by their testimony and theorizations, have succeeded in creating a doubt to the extent of causing a failure of the jury to agree because of the apparent disagreement of scientific experts who express diametrically opposite views. The main issue of guilt or partial responsibility is clouded or confused by the contradictory testimony of experts, the principal effort being directed apparently to create a doubt in the minds of the jury, and then the court is asked that the jury be instructed to give the prisoner the benefit of that doubt. Whether such a course is purposely followed is not known, but the effect is quite suggestive as a precedent to be followed with a reasonable prospect of a successful defense, the degree of guilt not receiving consideration.

It is a sad commentary upon what is called science, but the legal profession is resourceful and quick to perceive an advantage that may come from what has been called sometimes a battle of the experts. While the number of experts to be called may be unlimited by the court, according to the usual practice, what can be looked for but a state of mental confusion in the minds of the jurymen, even if they possess a conscientious intention of endeavoring to do exactly right? The evident purpose in a case where there is a narrow margin is to create a doubt which, for many reasons, may give a jury the opportunity they may desire to acquit or disagree or unconsciously acquiesce in what is sometimes called the unwritten law. It may be a part of correct legal ethics, which might be noted here, that medical witnesses may be properly called as experts to state all that can be possibly presented either in the interest of the commonwealth or the defendant, leaving it to the court and jury to thresh out a conclusion. While this view of expert testimony may or may not be correct, the rights of a defendant will usually be sustained and cannot be discussed here. It is, however, certainly true that the value of expert testimony has decidedly depreciated in the estimation of the laity, and we believe we may include the courts, because of theorizations that are not generally accepted, nor are they always founded upon well-established clinical experience. There are difficulties surrounding the nature and value of expert testi-

mony, the method of introducing the expert upon the witness stand so that he may appear there absolutely free from bias from any reasons, all of which are recognized, but a solution has not been reached. We are content, at this stage, to notice in passing some of the embarrassments that surround these trials that are recognized by every physician who has had a trying experience on the witness stand, nor shall we attempt to discuss his psychological state, which remains as an interesting subject for speculation after the ordeal has been passed, except to allude to it.

In a former paper referred to, five trials for homicides were cited in which insanity was alleged to exist at the time—even at the moment only—of the commission of the crime. All of the defendants were acquitted. In the opinions of the experts, whose judgments seemed to be accepted, they were cases of so-called mania transitoria, emotional insanity, epileptoid or unconscious states, irresistible or uncontrollable impulse or perhaps it might be as correct to call them impulses that were not controlled.

We now propose to consider another group consisting of cases in each one of which insanity was alleged by experts to exist at the time the crime was committed. This group embraces members who were the counterparts, in many respects, of the group heretofore alluded to, yet all were convicted notwithstanding the usual contradictory testimony of experts. How these different results or verdicts were reached is a fair question for consideration. Were they probably due to the fact that the array of contending experts was not large enough to create doubts that would otherwise have resulted in a mistrial? Were they not due rather to the fact that the court and jury drew a truer dividing line between insanity or disease and the unbridled operation of human passions which are implanted in all, but do not necessarily imply irresponsibility from disease because they are or ought to be controlled? These cases, and other similar cases that might be cited, present a fair question: Shall cases of so-called "modern insanity," which on examination are but instances of the operation of ungoverned passions, wholly escape punishment? Shall persons who have committed sudden acts of violence or made homicidal attempts without apparent motive, and with no history of insanity, be constructively declared insane because insane persons do

commit similar acts of violence? Are we as physicians expected to furnish a hypothesis of the existence of insanity, even in doubtful cases? Do they come within that department of knowledge which the alienist is supposed to possess?

A brief reference without detail will be made to a group consisting of sixteen cases or persons charged with homicide in courts of New York, Pennsylvania, and the District of Columbia.

No. 1. B. A convict, making his escape, turned upon an officer in pursuit, seized his pistol and killed him. Defense, epilepsy. A malingerer.

No. 2. T. Shot his wife in a public park by firing five shots into her body. Alleged cause, refusal of wife to live with husband, and jealousy. Alleged to have been an epileptic.

No. 3. I. B. Killed his paramour, because she refused to continue her illicit relations, by cutting her throat, nearly severing the head from the body. Defense, emotional insanity from jealousy.

No. 4. S. Killed a young woman, to whom he had been under engagement of marriage, and her brother in a public street by shooting. Defense, epilepsy and dementia.

No. 5. H. A degenerate boy killed a small boy companion by stabbing and torture after Indian methods and then placing the body in a stream of water, covered it with stones. Defense, moral imbecility.

No. 6. T. Shot and killed a banker in a contention about a money transaction. Defense, insanity.

No. 7. C. Killed the foreman of a factory because, on application, he was refused employment. Defense, insanity.

No. 8. S. Killed a young girl who refused to continue illicit relations with prisoner by cutting her throat, nearly severing the head from the body. Alleged epilepsy.

No. 9. H. Killed a farmer in a field of his farm by shooting with a rifle. Had some contention about a business transaction. Defense, inherited insanity.

No. 10. W. Killed his landlord by discharging a load of buckshot at short range into his body during a contention about an extension of a lease that the owner declined to make. Defense, emotional insanity, and insane at the moment he pulled the trigger.

No. 11. B. A convict killed a prison guard when angered by a reprimand for neglect of duty. Feigned insanity.

No. 12. W. Charged with killing three children and husband by administration of poison at intervals of time, on whose lives she had procured and collected life insurance money. Defense, insanity and irresponsibility at menstrual periods.

No. 13. S. Killed mother and assaulted sister with a hatchet, secured money the mother refused to part with, arrested in a house of prostitution. Feigned insanity.

No. 14. McN. Killed a young woman, after entering her bedroom unnoticed, by shooting with a pistol purchased a few moments before the killing. The young woman had declined the attention of the defendant. The defense was epilepsy.

No. 15. H. Case of murder by shooting. Alleged epilepsy.

No. 16. B. Killed a fellow workman in an outburst of frenzy by repeated blows with an axe, as he alleged, from momentary apprehension of personal danger.

All of these cases were presumably fairly tried. The defense was insanity, supported by such expert testimony as was available. The forms of insanity were alleged to be transitory mania, irresistible impulse, epilepsy, emotional insanity, or other forms. The plea was supported in each case by a variety of episodes in themselves of no significance and having no connection with each other, and such as might be found in the lifetime of many persons who have not committed any crime; such as, an unusual expression of the eye or face, irrelevant remarks and actions occurring only occasionally. Without exception, no evidence of any delusion was presented, nor was there a single occurrence of a convulsion shown in the cases of alleged epilepsy. There was, however, in the large majority of the cases, perhaps without exception, a history of progressive moral and mental degeneration due to alcoholic habits, vicious habits and excesses, low living and associations. Several of these persons were addicted to sexual excesses, or had disturbances of their marital relations. The crimes committed were marked also by excessive ferocity that usually characterizes the aroused passions in such cases. There was a sudden, emotional, psychical discharge, or eruption, beginning and ending with the criminal act, a common history of many crimes committed by habitual criminals.

The defense in these trials is commonly a collection of erratic acts which are interwoven into a hypothetical question, but in themselves of no significance to the medical mind, yet they are intended to create a doubt which shall be put to the credit of the defendant. Insane persons do commit criminal acts, but it does not follow nor should it be assumed that every killing is the act of a lunatic. Sane persons are constantly doing what the insane do. A single act does not necessarily imply insanity. As physicians, in our daily clinical observations, we endeavor to ascertain what is or has been the normal condition of our patient, and seek to

find what has been the change or departure from the normal state, and when it commenced. It is the rule that insanity is not a sudden instantaneous change. If it has developed suddenly or instantaneously, as is sometimes stated, there may have been omissions to note the import of its threatened approach, or the whole history has purposely been withheld. The only rule upon which we can act or come to a conclusion in these cases is that there is always a developmental stage of insanity as in our clinical experience in the observation of ordinary diseases. This rule we observe in the discrimination between insanity and shamming. The condition of insanity may also consist of an exaggeration of the ordinary normal condition of some persons, and even then the individual may have crossed the shadowy line between sanity and insanity.

Habit is defined as "a tendency toward an action or condition which by repetition has become spontaneous." Habit may even become an abnormal condition. We constantly refer to vices that become established by frequent repetition as vicious habits, vicious indulgences, always resulting in gradually weakening the will-power, or power of self-control, by frequent repetition. The inculcation of a moral code tends, on the other hand, to a corresponding increase of strength of the will-power and self-control, in the direction of the formation of decent habits of living and acting which are the foundation of social order and absolute justice. The formation of habits of living, of thought and indulgence of passions in contravention of the moral and written code enacted for the welfare of community, are offenses which will surely be followed by some expiation or atonement. If decent habits of living and acting in the varied relations of life can be formed and strengthened by practice, so the indulgences of an opposite course may intensify evil passions until they are beyond control and obliterated. If an individual shall knowingly elect to live the latter life, is he to be considered the victim of disease and wholly irresponsible for his misdeeds? Are such persons to be pronounced emotionally insane if the criminal act is in itself the only evidence of its existence that can be presented?

In the classification of the faculties of the human mind, the emotions or passions, many of which are instinctive, are commonly referred to as including love, anger and frenzy, envy

and jealousy, hatred and revenge. They have been called the instinctive passions in distinction from those that are acquired. With one exception, perhaps every one in the list of the sixteen homicides we have cited can be classed as a crime committed during a paroxysm of some one of the passions referred to. As a class, these criminals were pitiable subjects to look at and contemplate. They were victims of the indulgence in evil passions, a tendency to which was possibly transmitted by a vicious inheritance or was acquired by environment and intensified by habit and frequent, unrestrained indulgence. The crimes were of an atrocious character, marked by excessive ferocity. The victims were weak and defenseless, incapable of self-defense, against cowardly attacks. The defendants were degenerates or degenerating, or, in other words, had passed or were passing from a higher plane to a lower plane of living and acting. That all persons so inclined may pass into an abnormal or pathogenic condition is also to be conceded. In these cases, the proper sphere or limitation of the alienist would seem to be to differentiate between what is disease and what is none other than a paroxysm or exhibition of one of the passions which have been allowed unrestricted play. While the alienist may properly be asked to define insanity, and what experience and authority may teach, he is not best qualified to determine, authoritatively or as an expert, the operation and limitations of the human passions. Indeed, the alienist is not as well qualified as the judges who sit to interpret human actions as well as laws framed in the interests of social order and for the protection of society. It tends to lower the estimate of value of expert testimony that, as a rule, two, four or six experts can be found to testify to opposite conditions. Possibly this is a state of things in which the methods of conducting trials tend most to produce the unsatisfactory conditions that now exist for which the medical profession is not wholly responsible, but the responsibility should be placed on the judges. If these conclusions are to be considered as the confession of one who has had his share of experience, he should be pardoned if he enters a protest against lowering the standards of his profession. It is time that we should seek to elevate our standards, or so-called science, above that of a marketable commodity which has a price. We should stand by our professional standards and not be a party or parties

to widen the meshes of laws through which men wholly or partially guilty may pass unscathed.

The human passions are implanted in man for a wise purpose. They are instinctive and are intended for the protection and preservation of the species. Their proper operation may tend to the development of absolute justice between man and man and have a proper function. Everyone must also be responsible for their proper use and guard against their abuse. In a perfect state of things, there could be no abuse of the passions—no excessive demonstrations. If crimes are the results of abuse of human passions or are intensified by a vitiated inheritance, as we all concede is possible, so it must be also stated that human law has its imperfections and has not been framed or administered so as to deal with all the varied and complex happenings incident to society with absolute justice. We are willing to admit that psychological conditions do exist or may arise suddenly from exaggerated or intensified passions or emotions which explain some crimes, but are not to be considered as a condition of disease. Are there not psychical conditions that do account for crime, but do not amount to irresponsible states in the same sense that insanity or disease renders the individual wholly unconscious or irresponsible, as from a delirium or a delusion? Are there not psychical states that may modify responsibility in a *degree,* but not *wholly* excuse a crime or violation of laws that are established for the protection and welfare of society? These cases deserve a careful scrutiny, not that they are states of disease, but of subconscious cerebration that may and ought to modify responsibility. In sudden emergencies and critical moments, in a time of sudden and extreme peril, as in battle, persons have been known to do things of which they state subsequently they have no recollection—actions which resulted perhaps in the preservation of life, yet concerning which no details could be recalled. In such cases, it can be stated there is a suspension of action of certain mental processes. While we have thus done no more than attempt to describe the situation, yet can we say that insanity existed if that is the whole history of a case? Yet such has been asserted under a hypothesis that epilepsy or epileptoid conditions perhaps existed, although not a single convulsion had ever been observed.

We are willing also to concede what all experience confirms, that

a habit of indulgence in uncontrolled passions, like other habits of self-indulgence, may induce a pathological condition or a change in the character. It is also a common experience to find that passionate outbreaks are often associated with the alcohol habit, some sexual conditions or disturbance of the marital relations, or they have the marks of some inherited predisposition. They may show even some physical marks of degeneracy, as many persons can show, which have come down from former generations. It is a very common experience, when a crime has been committed by one of the class that has had a manner of living and thinking in a way calculated to cultivate and intensify vicious passions, to hear it stated that the deed was done in a state of unconsciousness and no recollection of it remained. What shall be the relation of the alienist to the case if called upon to examine such a criminal? He may properly seek to determine in his own mind whether the person was insane, as he would do according to the methods which prevail in his hospital, and as all authorities approve. He may seek to differentiate between mental disease and an act performed in an ebullition of anger, jealousy, envy, or any unconquered passion which, for the time, had the mastery. He may approach the question from another position and ask himself if, with a history of the case presented to him, he could and would have given a certificate of insanity, before the commission of the crime, as a warrant for a commitment and detention in a hospital. Some of us may recall instances where a person acquitted of crime because of insanity has remained in a hospital only long enough to have papers and certificates of recovery from insanity prepared. Have such proceedings contributed to the fallibility or infallibility of expert testimony? Why may not the expert make a distinction between insanity as a disease and criminal acts done under the impulse of anger or some one of the passions, leaving to the court if it should be admissible to measure the degree of responsibility? If the courts were allowed a wider latitude in disposing of those cases and determining the degree of responsibility, there would be fewer mistrials to record. Here is a field that the penologist may properly enter for study with the hope of making provision for measuring, so far as human ken can go, the various degrees of responsibility for crime. The ebullition of human passions, it should be remembered, does not constitute insanity or mental

disease, and the alienist ought not to suppose he is indispensable in their investigation beyond determining whether mental disease exists. There should be other evidences of disease beyond the criminal act. Neither does environment or heredity necessarily alone presuppose a state of irresponsibility. Justice and social order, as society is constituted, have claims for their preservation even equal in importance to the solution of merely scientific problems or the issue of a battle of experts.

On the occasion of the commission of an atrocious crime, when no other line of defense seems available, there remains what seems the last resource, the plea of insanity. Our profession seems to be a sort of residuary legatee of such contentions, and is often relied upon to create the reasonable doubts that will free the defendant from all responsibility. This outcome should not continue to be the opprobrium of our specialty. It has occurred partly from an erroneous confusing of the manifestations and explosions of passions with acts performed in a state of insanity; the usual methods of conducting cases by the judges; and the manner of selecting experts. If there could be some amendment and improvement upon present methods of introducing expert testimony, and if it were practicable to enlarge the degrees of criminality and responsibility, society would have additional security. Much of the dissatisfaction, and we might add the scandal, that grows out of the present system might also be avoided. The certainty of conviction for crime is one of the great safeguards against its commission. We all know that large numbers of cranks and others who allow their passions unrestricted sway are held in check only by the fear of punishment or some restriction of their personal comfort or liberty. It must be remembered there still remains an appeal for merciful consideration even after conviction.

The prominent points which have been presented in this paper perhaps in a desultory way have been suggested by participation as a witness, or a spectator in court, or by perusal of public reports of crimes and the trials that followed. In reflecting upon them it appears that the important or dominating thoughts may be condensed in a résumé as follows:

I. From common observation and experience, we recognize the fact that indulgence in passions—which, by the way, are

common to us all—may result in a loss of self-control and gradual degeneration which is acquired and not due necessarily to disease, inheritance or environment. If this is true of individuals, it is true equally that whole communities and even nations may degenerate to a low state, or be destroyed from a lax administration of justice. Human and divine laws are intended to secure the preservation of social order and the betterment of a community. On their execution depends the security of human life. If self-preservation is a maxim or principle which may be a sufficient defense of the individual, in a larger sense, self-preservation may be a warrant for a community to adopt extraordinary measures for its protection as well as for the prevention of crime.

II. If persons actually insane have been convicted of capital crimes, which we believe has been of rare occurrence, it has more frequently happened that a crime committed in an exacerbation of some one of the human passions has been condoned mainly through a doubt of the sanity of the criminal created by the evidence of medical witnesses who would not have felt warranted in signing a certificate of insanity for detention in a hospital, as no single symptom had been presented that antedated the criminal act.

III. In the opinion of some, the trial judges have freely opened the way to the introduction of extraneous issues; have permitted the introduction of highly technical questions, the use of scientific terms that do not imply necessarily advances in psychiatric knowledge, nor are universally accepted. It is admitted the names are new discoveries, unfamiliar, beyond the comprehension of the court and jury, in themselves having no significance, yet they have a mysterious influence, and work the court into a state of doubt or scientific indigestion. It is believed that insufficient attempts are made to differentiate the operation of the uncontrolled human passions from what we ordinarily understand to be the disease or condition we call insanity. Some amendment or change in the present practice of introducing the medical witness upon the stand without bias or the suspicion of it would be welcomed with great satisfaction, but it might be regarded as a gratuitous offer for a medical man to make suggestions about legal procedures that belong properly to the courts. Neither is there any limit to the number of experts that may be summoned in the present practice,

but, on the other hand, there is a tendency to an increase. In a trial in a neighboring city, sixteen experts were summoned, eight for the commonwealth and eight for the defense. It is submitted to you whether this is a reflection on the certainties, or does it show the uncertainties of our science?

IV. There remains yet another problem that the penologist must study, viz., whether it is possible that any modification of the penalties for crime can be made that would more justly recognize varying degrees of criminality?

V. Finally, the question and thought will recur, must the helplessness of man to approximate absolute justice in dealing with the class of cases we have been considering be confessed, and their disposition passed beyond all earthly courts to a Higher Tribunal hereafter?

# COURT TESTIMONY OF ALIENISTS.

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Specialists in mental and nervous diseases were not called into courts of law as experts until long after it had been the custom to command the services of persons supposed to be skilled along other scientific or special lines of work.

A hasty review of the literature having reference to expert testimony shows that the real development of a demand for expert medical evidence began with the calling of surgeons as advisers in court procedures, where complicated surgical problems were presented. Surgical methods and surgical results so greatly varied that justices of the courts of law, it seems, naturally felt incompetent to pass intelligently upon matters so foreign to their training and so far removed from the field of their general operations.

In English judicial tribunals, the expert made his appearance first as an adviser of the court. As early as 1353 the sheriff was ordered to summon skillful surgeons from London in an appeal of mayhem, to inform the court whether the wound in question was really mayhem or not.

In the seventeenth century it became necessary to call experts as helpers of the jury. In 1665 at the noted trial of the Suffolk witches, Sir Thomas Browne, a prominent physician and natural philosopher, was called upon to examine the accused, after which he gave expert testimony in court. This seems to have been a starting-point in English courts in the calling of medical experts, for the purpose of having them give their opinions in order that the courts and juries might be enlightened upon scientific medical subjects.

It is the purpose of this paper to discuss in a somewhat general manner some of the relations of medicine to law, but to particularly deal with medico-legal matters which involve the question of mental unsoundness. We may differ as to the proper order of

the discussion of this subject and entertain different views as to the force of the contentions herein set forth. That there should be a difference of opinion in the discussion of this subject is natural, since differences of opinion are so common to scientific subjects in general.

It is generally admitted in the columns of the lay and medical press that medical experts occasionally disagree. It is also quite well known that the average American citizen believes himself to be a standard authority on medical expert testimony. Men who know nothing of the responsibilities and duties of a presiding justice freely criticise his rulings. Men who know little of medicine pay their critical respects to the experts. The spirit of criticism goes further: Members of the legal profession with brotherly sarcasm discuss openly the gross mismanagement of court cases and the palpable blunders of the counsel; but this is not where the storm center of criticism is to be found. The testimony of medical experts furnishes the one theme which all men seem to feel fully qualified to analyze, simplify, rearrange, boil down or build up to meet individual fancy or personal prejudice.

The advisability, wisdom, necessity and propriety of employing expert testimony, as well as the weight that should be given it, has for more than a century been subjected to severe criticism and more or less violent discussion. The fact that it has for so long a period been given the critical attention of the ablest exponents of the bar, and the most accomplished members of the medical profession, and that it still is found to be an indispensable and highly important part of a large proportion of court procedures, is at least presumptive evidence that its importance is recognized in the courts of the civilized world, and that it will always be a necessary feature in the promotion of the cause of justice.

From a psychological standpoint it may be noted that it is a remarkable peculiarity of human nature that men who seem totally unqualified to do a thing properly are prone to arrogate to themselves an unlimited qualification to enlighten others as to the only correct mode of action. This manner of conduct has always obtained, and so long as we are human it will continue in a greater or lesser degree in spite of the babblings of superficial critics and the malicious and caustic fault-findings of persons who feel they

have found palpable errors but possess no ability to offer a practical remedy.

This particular phase of our subject calls for some consideration since highly reputable members of the professions of law and medicine have published their disapproval of the present mode or process of selecting medical experts, the manner of conducting their direct and cross examinations, the latitude accorded to them in the giving of their testimony, the value placed upon hypothetical evidence, the wide scope to the formation and use of hypothetical questions, the fact that experts on the opposite sides of a given cause so frequently disagree as to diagnosis, classification, testamentary capacity, criminal responsibility and contractual capacity, the fees paid to experts for their court work and services and the matter of the expert witness becoming either argumentative or combative while testifying.

These contentions are worthy of serious thought and discussion, and I feel that before this body of professional and scientific men, these important phases of the subject should be taken up and discussed in a deliberate and dispassionate way.

In taking up these propositions in regular sequence, it may be well to bear in mind that some lawyers have contended that the remedy rests with the medical profession; other lawyers assert that the proper solution must be reached by the co-operation of the two professions; some medical men contend that the statutes which regulate court procedure are at fault; others declare that the desire of medical witnesses to become advocates is responsible for a large part of the adverse criticism. Without taking issue at this time with any of these critics upon these points and assuming that they are all experts upon the question which they have attempted to analyze, it is clear to us who desire to be impartial and fair, that among this array of expert critics there is evidenced a considerable diversity of opinion about a proposition in which they contend there should be absolute unanimity on the part of medical experts, and since these savants fail to agree among themselves, and since no two suggest the same remedy, how are we to assume that they are capable of furnishing a practical legal order of procedure which will place expert testimony upon a more satisfactory basis?

Dr. F. W. Langdon, of Cincinnati, Ohio, says in the *Lancet Clinic* of August 15, 1908: "While it is plain that it is not our province as medical men to instruct the representatives of the law as to methods of court procedure, we may properly insist that any blame or failure attaching to faulty methods of procedure shall not be shifted in the slightest degree upon the medical profession or such of its members who may chance to serve as expert witnesses."

It is not difficult to discover unsatisfactory features in established systems. When we attempt to correct defect which we in our wisdom feel we have found, then the real trouble begins.

Difference of opinion exhibited by physicians in court often depends upon the fact that the witnesses on different sides of a given cause have not been afforded equal opportunities for the examination of the person being tried or are required to form their judgments upon a radically different set of facts, or a set of facts so differently grouped and presented as to make agreement next to impossible.

Dr. Langdon, in the article referred to, says: "Another proposed solution of the difficulty is to abolish the hypothetical question and the expert witnesses altogether in cases concerning insanity and substitute a commission appointed by the court. This procedure is now available whenever the judge desires to exercise it. I have known it to be applied in Ohio, and have served on such a commission. The press has also informed us that it was carried out in New York State in a recent case of wide notoriety. The commission there, we are told, consisted of two lawyers and one physician appointed by the judge. The trial was stopped while the commission examined the defendant as to his sanity. Since the trial was resumed after their report was rendered, it is a fair presumption that the commission, or a majority of it, considered the defendant sane. I have heard it intimated, however, that the two lawyers in this case decided the defendant sane; that the doctor found him insane. As the report was not made public, so far as I know, this may be a surmise only. We all know by the verdict what the jury thought, and further, that the jury's verdict was confirmed by two qualified physicians after a careful study of the prisoner, extending over a month's time, during which they were in daily association with him. These physicians testified that

he was insane. Now, the question naturally arises: Who had the better opportunity to judge, the commission reporting after a few hours' investigation, or the two physicians, after a month of daily observation and study?"

The commission referred to by Dr. Langdon was not to determine the question of vital importance to the accused, that of his mental condition at the time the crime was committed, but for the purpose of determining whether he was sane or insane at the time of the trial, more than eight months subsequent to the date upon which the act for which he was being tried was committed. In other words, it was to determine whether at the time of the trial he was in such a state of mind as to enable him to understand the nature and character of such trial and to advise with his counsel, and therefore did not necessarily have a direct bearing upon the mental condition of the accused at the time he committed the act for which he was then on trial.

The eminent physicians who have suggested remedies for the defects arising out of the present manner of selecting medical experts in important trials, seem generally to have overlooked or viewed with light regard the constitutional rights of persons being tried for their lives, and they have seemed to think it a simple matter to put aside by legislative action an established order of court procedure which has existed for centuries, and which is the natural outgrowth of the Magna Charta of our democratic government.

Some writers upon medico-legal subjects have gone so far as to suggest that a "Board of Experts" should be elected by the people; others that they should be chosen by the courts or appointed by the governors of the various States, and that these elections, selections or appointments should be for life. Is it not evident that this order of selection of experts would, because of a large number of reasons, prove highly objectionable?

(1) If elected by the people their nomination and election would in numerous instances unavoidably be tainted by politics. Politics, with all its virtues, should not play so important a part in the "Temple of Justice" where human beings are under trial for their lives or property rights are being determined.

(2) The selection of expert witnesses, if made by the court, could not be made with full appreciation of the unrevealed facts

involved in the defendant's case, nor could the defendant's counsel consistently disclose such facts to expert witnesses in whose selection he had no part. The competence and equipment of such witnesses would not be assured by the fact that the court made the selection.

Dr. F. X. Dercum of Philadelphia, Pa., in the *New York Medical Journal* of July 25, 1908, says: "To me it seems incontrovertible that the appointment of an official expert by the courts would be a very serious menace to justice. Who is to select the experts? It takes an expert to decide who are experts. Shall the judge, who is a layman in medical matters, make the decision, or shall it be a civil service appointment; if so, who are the experts to examine the experts? Again, it is a matter of common experience that public appointments soon become the play and spoil of politicians, and the danger would be that sooner or later the expert would be a person of the second rank or no rank at all."

There is no substantial basis for assuming that governors are qualified to choose or select boards of expert witnesses more satisfactorily than they are now selected. Then where is the wisdom of such proposed statutes? The fact that experts shall be selected by the governor would not guarantee their equipment nor would it give assurance that they would not at any time be of such independence of thought or possess such individuality of mental make-up as would enable them to disagree.

The appointment of boards of experts for life, which has been advocated, does not promise that agreement in testimony which theorists claim is the ideal result to obtain. That the Supreme Court of the United States is a most dignified body must be admitted by everyone, but even here we find a wide diversity of opinion upon given sets of facts submitted to them for judicial action, and yet the tenure of office of justices of the Supreme Court of the United States is for life. In the famous "Dred Scott" case, the Supreme Court was divided by a difference of one vote and the opinion was given by Chief Justice Taney, who represented the majority and who, after disposing of one point of law, followed it with his famous "obiter dictum," and in it gave utterance to sentiments which operated to hasten the great crisis and operated strongly to involve this nation in a civil war. There still exists a marked difference of opinion among the intelligent

people of this country as to the justice and correctness of the opinion and the propriety of the utterance of the obiter dictum of the chief justice. The opinion of the minority has yet many firm supporters; but why should there have been a difference of opinion? The Supreme Court was composed of able men of judicial temperament trained in weighing facts. The same facts were submitted in writing to all the members, and in spite of the fact that they held a life tenure in office, they disagreed. This decision and numerous others where the court was divided almost equally have been from time to time handed down, but we still retain confidence in this great arm of the government and attribute their differences of opinion to independence of thought and the exhibition of individuality and personality such as characterize the acts of great men.

The Supreme Court was asked to determine the question of the constitutionality of the "Income Tax." It is a matter of history that it was decided by a majority of one. There must have been quite a difference of opinion on the part of these learned gentlemen, these trained legal minds, and yet for this difference of opinion we do not hear them being abused for their partisanship. We hear no one say, in view of the fact that their tenure of office is for life and that they hold a non-partisan position and are not expected under the constitution to play the rôle of advocates, they are dishonest and the Supreme Court should be abolished.

We are rather inclined to the opinion that in this instance there was again an exhibition of personality, an independence of thought, and while the same facts were presented to all of them, their processes of reasoning in the application of the principles of law differed. We regard them as honest men and great men. We look upon the Supreme Court of the United States as one of the magnificent institutions of this government, but its members, like the individual citizens of other avocations and in other professions, exhibit their strength of character in their intellectual individuality in arriving at conclusions as to the application of the principles of law.

When all men shall agree on scientific questions, when all men shall reason alike, the monotony of scientific work will mean intellectual stagnation. There could be no competition and nothing for which to strive. All the problems of human life and human

action would be placed upon a stationary and fixed basis and progress would be impossible. Personalities and individualities such as Cæsar, Frederick the Great, Napoleon, Galen, Hippocrates, Physick, Watson, Osler, Kraepelin, Washington, and Lincoln, and numerous others whose work adorns the pages of history, would occupy no distinctive place in the records of professional and scientific progress. These are men who thought independently and thus became giants in the spheres of their action. They differed from other men. Men of a lesser degree of that quality of mind recognized in the equipment of geniuses must proportionately exhibit the mental prerogatives of discrimination, individual judgment and the application of scientific principles in the solution of the problems presented to them.

The criticisms upon the latitude given to expert witnesses have been numerous, but a satisfactory solution has not been suggested. Pointing out what seems to be defective or faulty in structure or cumbersome in action is not difficult, even if there be actual wrong. A logical, legal, reasonable and just remedy or correction is what is needed; to provide this requires more than a simple spirit of criticism.

Why are experts called to give testimony? It is generally conceded that the object of introducing expert testimony into court proceedings is to make clear scientific points relating to the question at issue and thus promote the best principles for the government of society in the just protection of life and property. The correct application of justice and equity to the principles of medicine is a vastly different process from that of making the principles of medicine meet the requirements of law; the one would mean the promotion of right by the orderly administration of law in accordance with the principles of a progressive science, while the other is too often the disarranging and misusing of legitimate and reliable scientific findings in order that they may be made to meet the demands of established legal precedents or harmonize with court rulings, many of which are relics of antiquity.

The art or science of medicine is progressive. It does not today depend on the dogmas and theories of the middle ages; it does not even hang to the theories of the last decade, but accepts that which is proven to be the soundest and best after it has been subjected to scientific scrutiny and careful analysis. In medicine no

great authority of the past is allowed to retard the investigations and progress of to-day or to interfere with the steady strides which are being made through scientific medical research in the interests of humanity.

The attacks made upon the worth of hypothetical evidence, the use of unlimited and extensive hypothetical questions, cannot be fairly charged up against the medical profession, and it is safe to say that much that has been said derogatory to hypothetical evidence and the value of hypothetical questions as they are used to-day has been said without due consideration or a proper understanding of the true reason for the introduction of such an order of giving testimony and the relative benefits arising out of it.

It is quite clear that the principle reason for introducing hypothetical questions in the trial of a cause before a court and jury is for the purpose of setting forth in a more or less abstract way scientific facts and conditions, identical with or similar to those which have been proven or are to be proven in the given cause at issue; and the extensive hypothetical question has been accepted for the reason that it is an expeditious manner of setting forth all the admissible parts of the testimony in a given cause so that the witness may form an opinion, not upon a part of the case, but upon a fair and reasonable presentation of the whole case; but it is to be much regretted that courts often allow hypothetical questions to be propounded which do not fairly present the whole case and even permit them when many of the cardinal or essential facts which have been proven are omitted.

While there is much to be said in behalf of the hypothetical question, there are undoubtedly serious objections to the manner in which it now is so frequently used. Personally I find hypothetical questions in many particulars objectionable in that they group together a number of hypotheses and force the witness to accept them all as proven facts and to reject all other manner of testimony not included in such hypothetical questions. This forces the witness to the formation of his opinion solely upon the assumed facts set forth in the question, and limits him in their use to such application and weight as are given them by the constructer of the question, even when it is clearly an unfair presentation of the evidence.

Frequently one hypothesis practically nullifies all the others

incorporated into the question. The hypothesis which has this power of nullifying may be based upon the testimony of a very ignorant witness, and the testimony may have been given while such witness was in a state of confusion due to the vigorous cross-examination he has been subjected to. The expert is not permitted to take this into consideration. He must assume that such facts are proven; how they are proven and the conditions under which they are proven is not to be allowed to play a part in the formation of his opinion. The objectionable features of such a restriction are from a scientific standpoint quite evident, but the rules or laws of evidence must obtain, though the heavens fall.

I am firmly of the belief that long hypothetical questions consisting of several thousands of words frequently do not tend to best advance the cause of justice. From my experience I am led to believe that, when such questions are so long and complex, instead of making a clear and concise presentation of expert opinion to the court and jury, they tend to bewilder and confuse rather than to elucidate and assist the jury to a better grasp of the situation.

It must be borne in mind that the slightest change in a hypothetical question will sometimes force the conscientious witness to a totally different conclusion and answer. In a somewhat celebrated murder trial in which I appeared as one of the expert witnesses, a hypothetical question was so framed as to lead a casual observer to believe that it embodied all the essential facts which had been presented upon the witness stand, but in one part of it it had this phrase: "and assume that at this time he was suffering from a disorder of the mind." Now, whatever might have constituted the other parts of this lengthy question, since a "disorder of the mind" is used to indicate mental unsoundness, mental derangement and insanity, it is clear that the witness, by the insertion of this one assumption, was left no choice as to a conclusion and was denied the right of discrimination and the opportunity of weighing the other parts of the question, and that all the remainder of the question was made practically immaterial and amounted to nothing more than a garbling of words to impress upon the jury the fairness of the counsel in the presentation of the case. In my opinion no court should allow an assumption or hypothesis which will nullify all other hypotheses and leave the

witness no discrimination and no opportunity to weigh other important hypotheses incorporated in the question.

The changing of one word or sentence in a hypothetical question will frequently disorganize the entire complex proposition. This is fully appreciated by well-trained and astute lawyers, but rarely does the general public or members of the medical profession inexperienced in court work give this item the consideration it deserves.

Macaulay, in his essay on Bacon, says of cross-examination methods: "We will not at present inquire whether the doctrine which is held on this subject by English lawyers, be or be not agreeable to reason and morality—whether it be right that a man should with a wig on his head and a band around his neck, do for a guinea what, without those appendages, he would think wicked and infamous to do for an empire—whether it be right, not merely believing but knowing a statement to be true, he should do all that can be done by sophistry, by rhetoric, by solemn asservation, by indignant exclamation, by gesture, by play of features, by terrifying one honest witness, by perplexing another—to cause a jury to think that statement false."

Much has been said about the conflicting nature of expert testimony and the fact that experts on opposite sides of a given cause so frequently disagree as to diagnosis and classification, criminal responsibility, testamentary capacity, etc., has furnished a theme which has called forth in a few instances some able criticism and in many instances explosive outbursts which seem to have had origin in a lack of comprehension of the salient facts involved in this important proposition.

It is a regrettable fact that much of the adverse criticism on the part of physicians against expert testimony is the direct outcome of professional jealousy and a lack of expert knowledge of the very subject on which they arrogate to themselves the right to pass final judgment.

Dr. William A. White, of Washington, D. C., in the *New York Medical Journal* of July 25, 1908, in his article, "Expert Testimony and the Alienist," says: "Professional jealousy is not unknown even among the doctors, and the specialist who is not 'called' to give his opinion, and to receive large fees therefor, can well afford to decry the lack of morale in his more fortunate

brother. In fact, in so doing he is but obeying a physiological law, and, in the language of modern psychiatry, but developing a 'defense reaction,' so that he may spare himself the discomfort that comes from emotions that find no means of outlet. Less technically, he 'vents his spleen,' thus relieving the tension, so that he may proceed with the day's work in a spirit of calm. That a lack of adequate comprehension of the problems of expert testimony and criminal law is at the bottom of much of the controversy is shown by the nature of many of the remedies for the presumed evils of the system that are proposed by its critics. These remedies frequently show an entire lack of understanding of the fundamental principles of American criminal law, and are proposed with a nonchalance that shows plainly that the writers have no idea that to carry them out would involve a radical change in these principles."

Often popular opinion demands the life of a man when such a penalty is not in accordance with medical science or justice. Testimony in behalf of such a person is always unpopular and elicits much severe adverse criticism. Even our courts have been known to bow to public opinion when their judgment has been to the contrary.

It is granted that experts other than medical experts disagree upon propositions in which there has been equal and full presentation made of all the known features, phases and conditions of the issue. It must also be admitted that medical experts in the various branches of medicine disagree whether they be in court, in medical societies, medico-legal societies, or at the bedside of the sick.

Two or more medical experts may be called to see the same patient and examine such patient in the presence of each other, leave and go to a consultation room and disagree as to diagnosis, prognosis or treatment, or all three. This is too well known to call for an elaborate discussion. If the same experts were called to the witness stand, if they were honest in their opinions and convictions at the bedside, could they be more honest if they were on the witness stand? If they had conscientiously disagreed at the bedside would their coming into the court room be a reason for a harmonious agreement?

Consider the action and conflicting opinions of noted expert

engineers in reference to the Panama Canal, or the experts daily called in the valuation of property; is it not known that they differ in their judgment, their valuations and their appraisements? Do lawyers agree on the application of the principles of law? If so, would there be any choice between lawyers when one was seeking advice out of court?

Again we will go back to the expert in medicine, and when I say expert in medicine I mean in any and all of the various branches of medicine and surgery. They visit a wealthy patient and hold a consultation; the fact that they differ in their opinion is not positive evidence that one is right and the other is wrong. They both may be wrong, but whether both be right or wrong in their opinions, either as to diagnosis, prognosis or treatment, it is not a recognized article in the code of ethics that either of them because of a difference of opinion shall deem it proper to decline to receive a fee in proportion to the professional services rendered and the financial ability of the patient.

A man who sees a case out of court and gives his honest opinion about it, although he may be in error, if he does not discover his error, will give the same opinion under oath, for expert testimony is necessarily largely opinion evidence, and more frequently based entirely upon assumptions grouped and presented by the examining counsel after his own manner and fancy.

The manner in which ordinary witnesses as well as experienced witnesses are badgered in court by pugnacious and aggressive lawyers, occasionally makes it necessary that a witness must either be combative or submissive. If he be submissive the public and the jury form a conclusion that he is poorly equipped, not competent and not qualified to testify in the capacity of an expert. Many members of his profession look upon him in scorn and he is humiliated in the eyes of the public. If, on the other hand, the expert witness stands firmly by his convictions, insists that his statements shall not be disturbed and misrepresented, and when there is an attempt made to force him into a false position, he frankly, openly and energetically combats it, there will always be found persons who will criticise him as being disposed to deliver a lecture, inclined to be an advocate or to show bias.

I contend that it is the duty of the expert witness to use every possible means at his command to properly understand the work

which is before him in any given cause with which he is associated, to set forth in plain English his opinions and to stand firmly upon his convictions, fearless of criticism and fearless of the often unfair, aggressive or pugnacious attacks of the examining counsel.

It is unfortunate that the qualifications of witnesses who go upon the stand for the purpose of giving expert testimony cannot be uniformly determined under a well-defined standard. This is now left to the court's discretion and too frequently incompetent persons and inexperienced and poorly equipped physicians are permitted to qualify as experts. Book experts or quotation experts should obviously have no place in the courts of law.

## DISCUSSION.

Dr. H. A. Tomlinson.—I was one of a committee of five appointed at the meeting of this Association in St. Louis in 1904 to consider the question of the responsibility of the insane for criminal acts; and while each member of the committee presented his opinion in writing, there was such a divergence in the conclusions expressed, that no report was made at the next meeting by the Chairman, Dr. A. E. McDonald. I should like, therefore, as a contribution to this discussion, in connection with Dr. Chapin's paper, to read what I wrote at that time, as having a distinct bearing on this question.

"Are the insane responsible for criminal acts?" In the present state of medical opinion concerning what is constituted in insanity, a definite or a direct answer to this question is impossible.

It will be necessary first to have a consensus of opinion as to what is constituted in insanity, and what is connoted by the term responsibility.

If the terms insanity and responsibility are used etymologically, insanity in itself is not a reason for not punishing the individual guilty of a criminal act; especially if it be an act of violence to the person, either with homicidal intent, or to satisfy sexual desire; because the impulse toward such acts is an inherent tendency in human nature! Criminal acts toward property may be in themselves the evidence of insanity, especially when they are wanton and apparently purposeless; and yet such acts are instinctive and habitual with the child and the defective. The presumption is, therefore, that criminal acts done by one to whom such conduct should be naturally abhorrent, indicate that he is deficient in self-control, whether the act results from impulse or follows deliberation. The lack of self-control implies mental incapacity; that is, a reversion to the primitive tendencies of the human animal.

The question is then, what degree of incapacity or loss of power to control the conduct that is manifested in criminal acts makes the individual irresponsible? That is, makes him unable to respond to those conditions

in his environment that affect the welfare of others, so that no harm shall come to them directly by personal injury, or indirectly by loss of property. If a man is insane, presumably he is not able to adapt those activities that are manifested in conduct to his environment; yet, men have been insane all of their lives without doing criminal acts! Again, men may be temporarily unable to appreciate their relations to those about them, and to control the activities that are manifested in conduct, so as not to interfere with the welfare of others. In other words, their response to the conditions in the environment is untoward to their neighbor. The nature of this disability is not influenced by its cause, as in alcoholism and narcotism; so that the fact that the man might have avoided the cause of his condition in no way modifies that condition; because the inhibition of control only released an inherent tendency.

Therefore, responsibility, that is the ability to respond, must be determined with relation to the individual, and cannot be the subject of a general rule; because no two individuals are alike, nor will they respond in the same way to the conditions in the environment. The determining factor as to the presence or absence of the ability to respond, is the capacity of the individual to control the activities that are manifested in conduct, so as to not interfere formally or grossly with the welfare of others. The only guide we have to determine this inability is the degree of defect present in the mental make-up of the individual, or the extent of the reduction in mental capacity associated with his insanity.

With regard to the expert witness, I believe there would be no trouble if we were content to be medical men, and did not try to be lawyers also. That is, if we refused to act as coach for counsel, and appeared as witnesses only—testifying from our special knowledge without regard to the effect of our testimony on either side of the case. But then, if we did take this stand, we would not be called as witnesses except by the State, and not often then.

Dr. H. R. Stedman.—Although there is no one subject that has been so long and so vehemently discussed by doctors, lawyers and people in general and no public measure directly or indirectly affecting the insane in which reform has been so loudly demanded as that of medical expert testimony in this country, little or nothing has been accomplished. Dr. Chapin's forcible and thoughtful paper makes this plainer than ever. Practical and promising suggestions are made, but nothing comes of them. For example, the proposed employment of experts appointed by the court as aids to the judge in ascertaining the truth, has many advantages. It is by far the surest way in which to secure unbiased expert opinion and at the same time does not interfere with the employment of experts in the usual way by the prosecution and defence, although the testimony of the court expert would carry more weight with judge or jury, who would probably regard it as entirely disinterested. Strenuous efforts have been made to secure legislation to this end, notably in New York and Massachusetts, but thus

far without effect. The past year, you may remember, a committee of the State Bar Association of New York, after conference with committees from the State Medical Associations, reported in favor of a bill providing that certain justices of the Supreme Court should designate a limited number of physicians, who could be called upon by the court, or by any party, to a civil or criminal action to testify in cases necessitating the employment of experts, but without limiting the right of parties to call other expert witnesses as heretofore. This bill passed the Assembly, but was defeated in the Senate. The expectation is that it will become a law next winter. I am sure we all devoutly hope so. It would be the first encouraging step toward real reform in this direction that has yet been taken. A great many alienists, to my knowledge, have been interested—not a few actively—in the solution of this question by some such means, but everywhere they are met by determined opposition to legislative action, chiefly of lawyers, and a few physicians to whom the accurate determination of the mental condition of the accused is secondary to the success of the particular side of the case upon which they are engaged and they are naturally not at all concerned in upholding the reputation of the expert and the dignity of the medical profession. Court experts in mental cases have long been utilized in Germany and with the best results in the way of speedy settlement of such questions. As a consequence, the sensational, long-drawn-out murder trial, with its array of medical experts on either side whose conflicting testimony makes them the butt of public ridicule, is almost unknown in that country. In certain especially obscure or important cases, where the sanity of the accused is involved, it is there a common practice for the judge to send him to a hospital for the insane for observation pending the determination of his insanity, and it is this object that I had foremost in mind when I arose, to again advocate before this Association the general adoption throughout the country of hospital-observation in such cases. If in any way the real facts of a person's mental condition can be learned, it should surely be when all his words and acts are exposed for months to the daily scrutiny of physicians and nurses trained in observation of mental manifestations. I hardly need remind you that such a law has long been in active operation in the State of Maine, where such observation is compulsory, and also in New Hampshire, Vermont and Massachusetts, where it is permissive. In Massachusetts we have just extended its application to persons who are under complaint as well as under indictment.

Dr. O. R. Long.—I desire to say a few words on this subject. I should, perhaps, introduce myself. Although I have met with you for the past twenty-five years, I have rarely risen on any occasion, except, perhaps, to make a motion to adjourn. This has been largely due to the fact that my work has been entirely along a special line, being Superintendent of the State Asylum for Dangerous and Criminal Insane.

Dr. Chapin's paper raises the question, "What is Insanity?" and upon

this subject we should agree among ourselves; that is, as a society, we should agree upon a classification, and also as to what constitutes an "expert," and agree upon the question finally alluded to by the doctor, whether a man has the right to come upon the witness stand and coin some new classification. We must admit that if this practice is allowed, it is likely to result in making the profession the butt of ridicule on the part of newspaper reporters and the laity. I do not think it would be presumptious on the part of the Association to suggest to the courts the best method of selecting experts, as well as defining the term "expert."

The question of responsibility, where the mental responsibility of the person charged with crime is involved, Michigan laws permits the judge, in his discretion, to summon experts for his own enlightenment, and requires that the consent of the court must be obtained before any person can appear as an expert. I have had considerable experience along this line, and have noted that the law is not as efficient as might appear at first glance. Often it works out something like this:

The court will summon an expert from a distance; often a man of long asylum experience, well qualified and unprejudiced. The defence is permitted to put against him on the stand a physician who practices in the vicinity where the jury lives, as well as the criminal. Usually this is a physician who has had no experience in the treatment or observation of the insane, yet his testimony will, in the minds of the jury, be considered of more value than that of the expert from a distance. The jury will reason, perhaps, that the witness has been the family physician or acquaintance of the person charged with the crime, has known him for a long period, therefore, his testimony as to his mental responsibility should be better than that of the physician who is an entire stranger. I have been upon the witness stand when the arguments of the attorney were upon these lines.

As an illustration of the workings of the Michigan law, I will refer to a case which occurred in our State recently:

The charge was murder; the defence was insanity. The court summoned two asylum superintendents as experts in the case. They came as unbiased witnesses of the court; they both testified that the man was irresponsible for the act. The prosecuting attorney immediately put on for rebuttal testimony physicians practicing in the city where the trial was held. The result was a disagreement of the jury. One year after, the case was re-tried; the two asylum superintendents, who testified by request of the court in the first trial, were summoned by the defence, and immediately testified that the party charged with the crime was irresponsible. The court at this trial summoned two other asylum superintendents as experts, and these two gave a directly opposite opinion. I was consulted at the last trial; the man was convicted. I am not attempting any defence of my testimony, but am showing that, notwithstanding the physicians summoned as experts at the second trial were all asylum superintendents, they were evenly divided upon the question of whether the accused was sane or insane. I recognize this is probably an extraordinary

occurrence, yet it shows that the appointment of experts by the court does not always bring about the same results.

I wish to say one word further regarding Michigan's law; that it is one of the few States that has provided an institution for the criminal insane. The law specifies that any person charged with certain crimes, who is insane when called to trial, may be committed to the criminal asylum until restored to reason, and then returned to the custody of the court, where he may be tried for the original crime or discharged, as the court may see fit. If the defence be insanity at the time the crime was committed, and he is acquitted upon these grounds, the court is required to summon experts to determine if the insanity in any way continues, and if found that it does, instead of being allowed to go at large, he is committed to the criminal asylum.

Dr. Sanger Brown.—I just want to make a small contribution to this discussion, and in the line of some experience I recently had, which has seemed to me to work exceptionally well.

I am not well versed in the laws of the different States on this subject, but I know in Illinois, where I reside, and in Iowa, we have a law, and I think it a law of recent enactment, which permits an expert to sit through the trial and hear all the evidence, and then sum up the different witnesses' testimony and express his opinion to the jury as to whether the case is insane or not and why.

In a recent case for murder which I attended, being summoned by the State, I sat through for seven days a trial where insanity was set up as a defence against a charge of arson, in which the whole community, pretty much, with the exception of the State's attorney and one or two of his assistants, were in favor of the defendant. She appeared in court with her three little children and made a very strong sensation, that is, impressed the whole community with the fact that she ought not be convicted. The newspapers took it up and did not comment favorably on my attendance, I being from some distance. The lawyer who defended her was postmaster of the country town, and had the local profession testify in her favor, so that if I had been denied the privilege of taking up the evidence witness by witness and analyzing it in my own way before the jury the defendant undoubtedly would have been acquitted. But after a few hours of patient explanation I was able to turn the tide and the defendant was promptly convicted.

Dr. C. B. Burr.—I encountered an interesting departure from ordinary precedents in the medical jurisprudence of insanity, some two or three years ago in one of the northern counties of Michigan. I was summoned to give testimony in a case of insanity. It was so plain that he who ran might read, but there was quite an effort made, notwithstanding the young man's condition, to prevent his commitment to an asylum. A jury was demanded and after it was impaneled—an extraordinarily fine jury it was

too—the prosecuting attorney sprung a complete surprise. He said: "Gentlemen of the jury, this court is organized under the proceedings which govern in the condemnation of land. You are the sole judges as to the admissibility of evidence. The judge of probate will swear the witnesses, but you will pass upon the testimony." Testimony was given in respect to the young man's conduct. Objection being raised, the lawyers would discuss the matter of its admissibility and finally refer it to the jury. The foreman, responding for the jury, would say something like this: "If I fail to voice the opinion of my colleagues, I hope I shall be interrupted, but in the absence of such interruption I shall assume that their sentiments agree with my own. Personally, I believe it would be well to hear the testimony." Testimony was introduced in respect to some postal cards the young man had written to the physician. The physician—himself a witness—was asked what the writing was. He replied that it was very obscene. "What were the exact words?" "I do not remember, I destroyed the cards. They were extremely obscene." The boy's counsel demanded again and again the *exact words.* Finally the foreman of the jury arose, raised his hand and said: "I object to this myself. The doctor has testified that the writing was very obscene and this is quite enough for the jury." Testimony on the question of heredity was presented. The boy's counsel objected. It was debated and finally referred. The foreman said: "I am a layman and do not pretend to understand these things, but had supposed in insanity, as in physical diseases, the question of heredity was of considerable importance. We are fair-minded men and will discriminate. We want to arrive at the exact truth. I think the jury will hear what the witness has to say." The upshot of the matter was that the *whole truth* was brought out and the boy was committed to the asylum.

Dr. T. J. W. Burgess.—The question seems to me to be a very simple one. What does the public want in all these trials? They want justice, or as nearly that as they can get it. If they cannot get the absolute justice which they want, how are they going to get as close to it as possible? Are they going to get it by allowing each side to call expert testimony? Not at all. An expert may take up a case purposing to give an absolutely impartial opinion, but sooner or later the desire to win, inherent in us all, comes into play and he becomes more or less biased. I know this is the case with myself and I think it is so with the rest of mankind.

My own idea is that the federal government in your country, the Dominion government in ours, should appoint three or five experts in all cases of doubtful sanity and let these men decide the point. Have no expert testimony called for either side. Whether you call three men, or five men, let the majority of the three or five, right or wrong, decide it. In that way, I think, you are going to come nearer to justice than in any other way, and justice is what the public wants.

Dr. E. N. Brush.—I think Dr. Burgess has stated the truth when he says experts are very often prejudiced by the fact that they are called by one side in a controversy. It is very hard work to be called by the prosecution and not wish its contention to prevail, and *vice versa.* I doubt very much whether the calling of experts by the court would solve the problem, at least, it would not in the United States, because a person on trial has the right to summon anyone he pleases who has any light to throw on the subject. At the same time courts all over the country have also the right to summon independently any witness that the court believes can throw any light on the subject which will aid the court in giving an opinion, or a jury to reach a verdict. This is done frequently.

Over thirty years ago, as a medical student, I attended a trial for malpractice in which expert testimony was given on both sides of the case, but at which the court summoned upon its own motion three physicians to whom it gave instructions to examine the plaintiff and testify to his actual condition and upon their testimony the verdict of the jury was based.

One of the most interesting trials I ever attended was a case involving the question of insanity after conviction and sentence of death in which the court appointed as referees Drs. Chapin, Dana and Allan McLane Hamilton to sit with the court, and listen to the testimony and examine witnesses. The United States district attorney propounded to us the usual preliminary questions, and then turned us over to these medical men. It was a searching examination, but it was fair, and the questions were intelligent. If questions were asked we could not answer we had not the least hesitation in saying so, because we knew the medical men would understand, when we said we did not know, that we could not be presumed to be able to understand all questions.

The great difficulty in securing experts who will impress the jury as impartial is, that being called by one side or the other, they often appear to find it necessary in giving their testimony to evade a direct answer which may be favorable to the opposite side and they will argue with the court and with the attorney on one side or the other and make themselves appear to be partisans, when they are really trying to be as impartial as they can, but are afraid they may give the impression of being uncertain, of having no positive opinion. Then they fear they will incur a certain amount of disgrace if they say, "I don't know."

The difficulty is, as Dr. Burgess has pointed out, the danger of partisanship. In giving testimony, I have no hesitancy in saying that I do not know; it is my duty to do so if that be the case. I have never felt that it was incumbent upon me to argue with a lawyer. The expert witness who becomes so interested in the outcome of a case as to be anxious for his "side" to win, or who feels that he has been overcome in the contest, if the verdict is against the side which called him, is a partisan and cannot, no matter how honest he may be, avoid the appearance of being a partisan, to the discredit of his credibility, and of expert testimony in general. So also with the witness who sits with the counsel and acts as a medical

coach. I have never hesitated to suggest questions to be propounded to witnesses, medical or lay, the answers to which might help me in forming an opinion, but such a course even I recognize as suggestive to the court and jury of partisanship. To suggest catch questions or questions intended to confuse or discredit a witness is certainly open to such suggestion and more often has that result than any other.

In regard to the hypothetical question I do not believe that it is of any real value. The hypothesis of one side is as a rule so drawn as to demand an answer favorable to its contention. The question of the other side demands a diametrically opposite answer and the opinion of the witness testifying as an expert is thus made to appear to the jury as of little or no consequence.

Some time ago I was given a hypothetical question, and told to exclude from my answer any knowledge I had from my personal examination of the prisoner. I said: "I cannot do so, and I will not answer the question unless I can use what knowledge I have of the case." The court sustained me. It is impossible for a witness to exclude from his mind, in giving his answer, part of his knowledge of the case.

Dr. Burgess.—Dr. Evans is quite right in saying that by the constitution a man on trial has a right to defend himself in any way he chooses, but cannot the constitution of the United States be amended? I know our Canadian constitution could be if we set about it.

Dr. Brush.—Some of us think it can be and some think it cannot be.

Dr. C. K. Mills.—This is a very old question. I have been doing so-called expert work for many years. I have heard time and again different methods advanced for curing the evil. Several of those who have already taken part in the discussion have given some of the real reasons why we cannot improve much on present methods.

In the first place, our constitution and that of England require that every one on trial should be allowed every possible legal means of defence. No matter how many experts are appointed by the court the defence will also have the right to call experts. The fault is not in the constitution, not in our forms, but it chiefly resides in the conduct of individuals. There is sometimes an absence of the principle of fairness in the methods of investigation and trial, although this it not always or even usually the case. Recently in a case in which I was a witness there were eight experts on each side. The same opportunities were not allowed to the so-called expert witnesses on the two sides to examine the accused. For instance, it was insisted that the experts for the commonwealth should be present when the witnesses for the defence made their examination. On the other hand, the experts for the commonwealth were allowed to examine any number of times, with or without the presence of the experts for the defence.

The appointment of court experts will not solve the difficulties. Great abuses may come from the appointment of so-called State experts. Personal and even political influences might play some part in their appointment. So it seems to me the present method is all right if it is carried out properly in particular cases.

There is much to be approved in prolonged hospital observation, and any law that allows such observation to be made equally by men selected for the defence, the prosecution and the court should result in some good. It may also be of some use at times to allow the defence and prosecution to choose a third party or parties as arbiter or arbiters. In one such case, however, in which I was chosen for this purpose the result was not altogether satisfactory to parties.

Dr. H. W. Mitchell.—I wish to call the attention of the Association to a method which has done much in one State to eliminate partisanship from medical testimony in the cases of alleged criminals who plead insanity in defence.

For several years it has been the custom of the Maine criminal courts to take advantage of the observation law, which provides that in the case of a person pleading insanity as a defence to crime, that person may be committed to one of the two insane hospitals of the State for prolonged observation and report to the court as to mental condition. The period of observation can be extended at the pleasure of the hospital superintendent. He is required to report to the court at each criminal term whether or not it is necessary to detain patient longer for observation.

Having spent some two or three years in the Massachusetts Hospital for Insane Criminals, I know from experience the extreme difficulty that exists in making a diagnosis of insanity in these cases, and also the frequency with which the problem is complicated by malingering, which can be detected only by prolonged observation and careful study. Under the provisions of this law, every facility is given physicians for making careful study of the case and forming a reasonably accurate opinion as to the person's responsibility, which can be given without any partisanship, as the law requires that reports should be made to the court, and it frequently happens that the hospital superintendent goes to court without knowing which side will summons him as a witness.

There has been, to the best of my knowledge, no difficulty in securing reasonably satisfactory justice in a quiet and non-spectacular manner, with persons of moderate means who have been disposed of under this law. Whether or not the law would work equally satisfactorily in the case of a rich criminal, who might secure many medical experts, remains to be tested.

Dr. C. G. Hill.—I quite agree with Dr. Mills in regarding the old system as probably about the best we can devise, all things considered. I admit there is much adverse criticism of our present method and many

suggestions for its change, but these come chiefly from the legal profession and a few medical men. If we dare to depart from the law-made insanity as interpreted by the courts, and base our opinions on the insanity as we see it in our institutions and study it at the bedside our motives are impugned and we are soundly abused by the lawyers, the press and the public, constituting themselves experts on matters of which they know very little. Dr. Burr's experience with a jury brings out a very strong point. I have great faith in a jury. They may not be experts in psycopathy, but they bring to bear on the case good common-sense and come a little nearer the truth in their conclusions than can be reached by any other method yet devised. Though hedged about with rulings, admissibility of evidence and all kinds of technicalities, with court-appointed experts thrown in, the average juror is the judge of the law and the evidence, and down at the bottom of his heart he weighs many things not admitted by the court, and brings in the verdict accordingly. The experts appointed by the court would not be infallible by any means, nor unprejudiced, as few men are so judicially constituted as not to lean a little to the power that appointed them. In a celebrated trial in this country some years ago the government called practically every expert of prominence in the United States, and the defence was only able to command a few obscure men. The jury promptly convicted the prisoner and he went to the gallows, the plea of insanity having been completely snowed under, but the post-mortem showed a defective brain and subsequent reflection has led to the universal diagnosis that the man was a typical paranoiac. Let the jury be the judge of the evidence, the good old cross-roads common-sense jury, that will weigh the evidence from its own standpoint, will place its own standard on the experts as well as the other witnesses, and we will come pretty near the truth. In order to be unanimous, though they may have to "toss up a penny" or play a game of "seven-up," they will average about as near the equity of the case before them as the most learned expert the court might appoint.

Dr. E. E. Southard.—As pathologist, I should like to know what lesions indicating paranoia were found in the patient mentioned by Dr. Hill.

Aside from this detail, as psychologist I was much interested in Dr. Evans' paper and particularly in the penultimate paragraph. As I understand it the basis of his contention is that diagnosis is difficult or impossible. Even in questions of law, Dr. Evans notes, the Supreme Court of the United States may be unable to pass judgment without disagreement, four men against three in certain instances. The point is, however, that, disagreement or no disagreement, the Supreme Court does eventually come to a decision and a decision which is unbiased. Similarly in questions of insanity, although we cannot require absolute agreement on the part of experts, we can and should require the best diagnosis obtainable.

Dr. Evans appears to whitewash the situation and to believe that no improvement can be made in our present procedures. On the contrary,

however, I believe that the present state of medical expert testimony in this country deserves to be severely criticised and I welcome the abundance of criticism evoked by the papers of to-day. Dr. Evans appears to think that experts cannot arrive at sound conclusions. As Dr. Hill has mentioned autopsies as confirmatory of diagnoses, I should like to call attention to some facts which I have collected at the Danvers Hospital. I do not wish to say that our results are better than those obtained in other hospitals; but the Danvers Hospital data are in good shape for obtaining an idea of the probable accuracy of diagnosis as made in a democratic fashion by several men.

I have correlated the autopsy findings with the clinical diagnoses in a long series of cases at the Danvers Hospital. The cases have been diagnosed by good men, several of them members of this Association. Their diagnoses have been recorded in books at the time of examination. I have used for the correlation these recorded diagnoses and have not employed the revised post-mortem clinical diagnoses or the diagnoses of the annual reports, so that I believe the diagnoses which I have considered represent the practical difficulties which confront the diagnostician.

The results show that in general paresis there is a probable error in diagnosis of about one in ten. In the case of senile dementia there is a somewhat larger error. If the cases of general paresis and of organic brain disease be lumped together for diagnostic purposes, as in the admirable statistics of Dr. Abbot, the error is reduced below 1 per cent.

The results in manic depressive insanity and in dementia præcox have not been formulated. Doubtless the results would not be so striking as in the organic group. Still I maintain that with hospital observation under the best circumstances a very high degree of accuracy in diagnosis can be obtained. I heartily agree with many of the gentlemen who have spoken here, insisting on the value of hospital observation for the medico-legal diagnosis of insanity. I should like to inquire whether anyone present has really any important point to make against hospital observation as the best method for determining the insanity of persons accused of crime.

Dr. E. N. Brush.—I am in favor of hospital observation, and it is not by any means necessary to have law in the matter in all cases. I had an illustration of that only recently. A man had committed a crime against the United States government and it was agreed by his attorney and the United States prosecuting attorney that he come to the hospital and have his condition investigated and remain there long enough to have a diagnosis made and his attorney and he agreed to abide by the report. He is now serving a term in the penitentiary as the result of the report. It saved a necessarily long and tedious trial and I think that justice was in this way but served.

I think in regard to this matter of expert testimony we are taking ourselves a little too seriously perhaps and not considering the other side of the case. Experts have been made to appear ridiculous before the courts

and the public, not so much because of the fault of the experts, but because of the way in which the trial has been conducted by the attorneys, and Dr. Mills has called attention to this.

In regard to a notorious trial, it has recently come out that one of the chief attorneys for the defence spent, according to his own statement, large sums to keep certain testimony in the background so that the man would not be sent to an asylum, but should be found insane at the time of the commitment of the act, but not before that time or when on trial.

I have known of other similar cases in which all the testimony in the case was not desired to be brought into public light, in which the experts were kept in the dark as to matters, upon which, if they had only had the information, they might have given more satisfactory testimony, both to themselves and to the cause of justice.

Dr. B. D. Evans.—The discussion has so fully covered the ground which the papers, both Dr. Chapin's and mine, were intended to cover, that it leaves very little for me to say, except that I am practically in accord with most everything that has been said. A number of the gentlemen have expressed ideas and plans of remedies which are impracticable and which cannot be carried into effect, and some have suggested methods which are impossible under the constitution of the United States. I have no doubt that if we could change the constitution at will, that it would be changed a good many times every year. Fortunately for this great government, it cannot be so easily tampered with. There may be some little inconvenience suffered in the courts and by private individuals as well, but for the good of the whole people it is a pretty safe old document that I think will stand the test of years to come.

In reference to the admission of court physicians, whose report shall govern the verdict, it would be far from ideal or acceptable to the laity or courts of law, and it would mean that the physicians would try the case. No court would approve of such a procedure, and no legislature with good lawyers in it would pass a law which would leave the entire guilt or innocence of a person being tried in the hands of a board of physicians. Of course, if you and I and your brother were the three physicians, it might seem all right, but tell that to the public and the courts, and the scheme will be promptly rejected.

I have a very decided feeling about the manner in which we seek to adjust unsatisfactory conditions of this sort. There are few physicians who have had any experience in the courts in important cases, but have had their opinions severely criticised by people of ability and by physicians of equal ability. Now, as we take up the matter of the discussion of this subject, we shall discuss in the hearing of the public and the press the main proposition or the question of the reasons for disagreement among experts, as if we, the speakers, have all along been right and the fact that there is so frequently a difference of opinion has been due to the errors and unwisdom of those who have been so unfortunate as to disagree with

us; we go so far as to say that it is a disgrace and a stigma on the profession. This order of criticism indicates that we are arrogating to ourselves all the purity of purpose, perfection of training and proficiency in equipment. Such a course of reasoning and such an order of criticism settles nothing and does harm rather than good. As I set forth in my paper, I maintain that men of equal ability with the same set of facts before them will often reach different conclusions, and that largely explains the matter.

Much has been said of the court selecting the experts. In two murder trials I was selected by a justice of the Supreme Court of the State of New Jersey, who was afterward chief justice, and is now chancellor of the State, to appear for the defense and for the prosecution; that is, I was the sole medical expert witness in the case, and was examined and cross-examined by the counsel of both sides, and I regret to say to you, that contrary to my judgment, there was a conviction in both cases; one man was sentenced to death and one given an indeterminate sentence. The man sentenced to death I believe was unjustly so sentenced. I gave as clear testimony as I knew how to give. I did not intend to give such testimony as would enable the jury to hang the man, but they brought in a verdict of murder in the first degree, and I had to work very hard to have his sentence commuted by the Court of Pardons.

The having of one expert witness and allowing him to be examined by both sides, is calculated—when one lawyer is much abler than the one on the other side—to result in a miscarriage of justice.

The "three physician" idea that Dr. Burgess spoke of, is one I espoused years ago and wrote a paper endorsing it and read it before the State Medical Society of New Jersey, but after a more thorough reading upon the legal and social aspect of the subject, I submitted it to numerous lawyers; they said that my scheme was good, and I think it was good, and I think Dr. Burgess' scheme is good, I believe in it—but what is the use of talking about something we cannot do? I think the suggestion that it would be ideal for us to always agree is a good one, but how in the name of heaven can we do it, and as thinking and reasoning men retain and exhibit any individuality or any independence of thought?

The matter of a change in the constitution of the United States has been discussed as far as time will permit, and since we possess no power to change it, we may better leave that part of the question for further consideration.

I desire to say a word relative to the matter of subjecting an accused person to the examination of physicians representing the State or the prosecution. I have been advised on this subject by a number of able constitutional lawyers, and their opinion is to the effect that an accused person has certain rights under the constitution which cannot be violated, if his counsel properly protect him, and that he may not be subjected against his will to the examination and scrutiny of anybody that may be selected, either by the court or any other authority, and if that be correct, then we

cannot have our troubles righted in this direction under our present constitutional regulations and the rulings of the higher courts and such contentions are futile.

One of gentlemen has spoken of the readiness with which the members of the medical staff of a hospital for the insane agree on diagnosis after holding a newly admitted patient under observation for a few days. We all know how they agree; but we understand that we have got it coming to us when we have to make up our statistics and classifications for the annual reports. We know, as a rule, that we have a number of cases at the end of the year which are difficult to classify. One member of the staff will want to put a particular case here, and another there, until the superintendent tires of the discussion and determines the matter. There is no serious confusion then; you are not in court and you are not forced to hasty action. You are just trying to do your duty and make the best possible classification in the official document, but you have your troubles, perplexities and differences of opinion, just the same. I have had it, I know, and I am willing to admit it.

When we have trouble in court, as Dr. Brush has very aptly said, if we have to hesitate, do so, but when you don't know, say so promptly. I may say that in court this has always been my rule, and I have found it a good one. I think the jury has more respect for a man who says he does not know than for the other man who tries to avoid the issue. The straightforward way is the only correct way.

It has been a matter of very great pleasure and gratification to me that the papers have had such an extended and intelligent criticism and discussion.

# FORMS OF INSANITY IN FIVE YEARS' ADMISSIONS TO, AND DISCHARGES FROM, THE HOSPITALS FOR THE INSANE IN MASSACHUSETTS.

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In order that preventive and curative measures may be most effectively applied in relation to insanity, it is important to know what kinds of insanity occur in any community, the relative numbers or proportions of the different kinds, and their outcome. Knowing these, we have a standard or norm for that community, from which to determine what kinds and proportions of cases will best repay prophylactic and curative efforts, and with which to compare the results of such efforts.

Several years' records of one large hospital will furnish approximate figures for such a standard, but it draws its patients from too small and too ill defined an area to be free from the possible influence of local conditions. If, then, we can get data from a sharply defined region large enough to support several large hospitals, and having varied conditions of living, we should be able to establish a present norm of incidence and outcome of insanity. The figures here given represent an attempt to find such norms. They are, however, only suggestive, for the period covered is too short and there is too little uniformity and accuracy of diagnosis to make them more than this.

The Commonwealth of Massachusetts represents such a sharply defined area. It has several State hospitals for the insane, varying in capacity from about 500 to 1600 beds each, and several private hospitals and licensed physicians who take care of insane patients. From all these hospitals and physicians the State Board of Insanity has required uniform statistics concerning the insane patients under their care, and has published certain of these data in its annual reports. Previous to five years ago it tabulated the data from the state hospitals and the McLean Hospital only. Since

then it has included those from all the smaller private hospitals and licensed physicians as well. It is from these data concerning all insane persons in the State of Massachusetts who have required hospital care during the last five years that the figures in this paper are drawn. Through the courtesy of the Executive Officer of the Board the figures for the current year have been included in the table which I shall present, and I take this opportunity to express my appreciation of his kindness in giving me access to them in advance of their publication.

Massachusetts, though small in area compared with many of the States in the Union, has a large population—somewhat less than 3,000,000 on October 1, 1903, and somewhat more than 3,000,000 on October 1, 1908. Besides the people native to the State for three or more generations, there are large numbers of Irish, French-Canadian, Italian, Russian, and Portuguese birth or descent, with a fair sprinkling of other European and Asiatic nationalities. There are comparatively large agricultural regions, thinly populated with farmers. There are small towns, and small and large cities. There are large manufacturing communities. There is a long coast line, with excellent harbors, and there is much fishing, and coastwise and foreign commerce. There are numerous railways, both steam and electric. There are abundant schools and colleges. The only great industry that is not represented is mining. There is local option as to the sale of alcoholic drinks, and high license where they are granted. It would seem that such a community, with such varied conditions of living, should furnish the data for determining approximate standards of incidence and of outcome of insanity, and that wide departure in any given community from such standard would be due to local or racial conditions peculiar to that community.

During the five-year period between October 1, 1903, and October 1, 1908, 14,770 patients were admitted, and 11,903 were discharged. The State Board classes them under 47 diagnoses, and these are condensed from the more numerous diagnoses submitted to it by the different hospitals. It is improbable that there are so many different *kinds* of insanity, though there are many *varieties*. The number merely illustrates the difficulties of diagnosis, and different points of view in diagnosis. It seems to me

that there are not many, perhaps eight or nine, *fundamentally* different kinds of insanity. Briefly, the grounds for this belief are the following inferences and facts:

All mental activity is in its fundamental nature a reaction of the individual to his environment, himself, and all his own mental and physical reactions being included in the environment. Each individual reacts normally provided the organs for such reactions, the nervous system in all its ramifications, is normal. If this nervous system is altered in any part, whether temporarily or permanently, that part cannot subserve its reactions normally. The reactions that do result, if they are not entirely abolished, are *abnormal, i. e.,* are *symptoms* of disease or pathological condition of the nervous system. The symptoms shown by any given case of insanity will be determined by the distribution, extent, intensity, and nature of the pathological changes (whether temporary or permanent) in the nervous system; the parts that are unaffected will continue to react normally. Since we know the nervous system only imperfectly, and its pathology still less perfectly, and since we cannot examine it directly during the life of the patient, we *infer* pathological changes when we see abnormal reactions. Often we are at a loss to even guess with probability at the nature of the underlying change. But when we find certain types or groups of abnormal reactions, *i. e.,* symptoms, we *infer* certain types of underlying pathological change or condition. There are many symptoms and combinations of symptoms the relative value of which we do not know; hence individual judgments will vary concerning the inferences that may properly be drawn from them. Thus we get a wide range of nomenclature or diagnosis. And since we find in a disease like general paralysis, whose pathology is fairly well known, a very great variety of symptoms, and in individual cases peculiar combinations of symptoms, yet, in all, a common pathology, it is fair to infer that there may be an equally diversified symptomatology as a result of some other pathological condition which is less well or not at all known. And, in fact, I believe this to be the case. And since there are comparatively few kinds of pathological changes which occur in other organs, so, I believe, it is with the nervous system.

TABLE.

ADMISSIONS TO AND DISCHARGES FROM HOSPITALS FOR THE INSANE IN MASSACHUSETTS FROM OCT. 1, 1903, TO OCT. 1, 1908.

| Diagnosis. | Admissions. | | Discharges. | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number admitted. | % of total admissions. | Number discharged. | % of total discharges. | Recovered. | | Capable of self-support. | | Died. | | Remaining. | |
| | | | | | Number. | % of group. | Number. | % of group. | Number. | % of group. | Number. | % of total admissions. |
| I. Organic Brain Disease Group: | | | | | | | | | | | | |
| Senile insanity | 1775 | | 1609 | | | | 26 | | 1365 | | | |
| General paralysis | 1234 | | 1180 | | | | 41 | | 941 | | | |
| Coarse brain lesion | 479 | | 463 | | 1 | | 12 | | 385 | | | |
| Organic brain disease | 102 | | 85 | | | | 5 | | 61 | | | |
| Choreic insanity | 19 | | 15 | | | | 4 | | 10 | | | |
| Total | 3609 | 24.4 | 3352 | 28.1 | 1 | | 88 | 2.3 | 2762 | 82.4 | 257 | 1.7 |
| II. Dementia Præcox Group: | | | | | | | | | | | | |
| Dementia præcox | 3096 | | 2062 | | 94 | | 310 | | 619 | | | |
| Paranoid condition | 301 | | 149 | | 9 | | 22 | | 32 | | | |
| Delusional insanity | 70 | | 74 | | 1 | | 7 | | 41 | | | |
| Chronic dementia | 63 | | 129 | | 1 | | 5 | | 109 | | | |
| Secondary dementia | 48 | | 363 | | | | 7 | | 323 | | | |
| Chronic mania | 6 | | 36 | | 1 | | 5 | | 22 | | | |
| Obsessional insanity | 1 | | | | | | | | | | | |
| Total | 3585 | 24.2 | 2813 | 23.6 | 106 | 3.7 | 356 | 12.6 | 1146 | 40.6 | 772 | 5 2 |
| III. Manic-Depressive Group: | | | | | | | | | | | | |
| Manic-depressive insanity | 2111 | | 1842 | | 893 | | 263 | | 288 | | | |
| Confusional insanity | 119 | | 103 | | 42 | | 9 | | 28 | | | |
| Neurasthenia | 97 | | 95 | | 35 | | 14 | | 20 | | | |
| Acute melancholia | 72 | | 51 | | 16 | | 2 | | 14 | | | |
| Hysterical insanity | 53 | | 46 | | 27 | | 6 | | 1 | | | |
| Acute mania | 37 | | 22 | | 10 | | 1 | | 3 | | | |
| Traumatic insanity | 34 | | 25 | | 6 | | 12 | | 3 | | | |
| Periodic or recurrent insanity | 27 | | 42 | | 13 | | 7 | | 13 | | | |
| Psychosis with somatic disease | 12 | | 17 | | 1 | | 1 | | 9 | | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Insanity of pregnancy | 12 | | 9 | | 5 | | | | 1 | | | |
| Exhaustion psychosis | 6 | | 4 | | 1 | | 1 | | 2 | | | |
| Amentia | 6 | | 5 | | 1 | | 2 | | 2 | | | |
| Compulsive insanity | 3 | | 1 | | | | | | | | | |
| Acute hallucinosis | 1 | | 5 | | 4 | | | | | | | |
| Graves' disease | 1 | | 1 | | | | | | 1 | | | |
| Total | 2591 | 17.9 | 2268 | 19 0 | 1054 | 46.4 | 308 | 13.5 | 385 | 17.0 | 323 | 2.1 |
| IV. Toxic Group: | | | | | | | | | | | | |
| Acute alcoholic insanity | 1219 | | 1048 | | 705 | | 167 | | 80 | | | |
| Chronic alcoholic insanity | 572 | | 298 | | 4 | | 101 | | 76 | | | |
| Acute delirium | 171 | | 168 | | 63 | | 15 | | 79 | | | |
| Acute toxic insanity | 106 | | 87 | | 46 | | 14 | | 16 | | | |
| Korsakow's psychosis | 58 | | 38 | | 6 | | 13 | | 11 | | | |
| Chronic toxic insanity | 16 | | 18 | | | | 1 | | 11 | | | |
| Delirium with somatic disease | 4 | | 5 | | 3 | | | | 1 | | | |
| Myxœdematous insanity | 4 | | 6 | | 2 | | | | 3 | | | |
| Total | 2150 | 14.5 | 1668 | 14.0 | 829 | 49.7 | 311 | 18.6 | 277 | 16.6 | 482 | 3.2 |
| V. Defective Group: | | | | | | | | | | | | |
| Imbecility | 512 | | 304 | | | | 39 | | 130 | | | |
| Mental deficiency | 198 | | 67 | | | | 3 | | 33 | | | |
| Psychopathic inferiority | 150 | | 96 | | | | 31 | | 6 | | | |
| Constitutional inferiority | 22 | | 17 | | 3 | | 4 | | 3 | | | |
| Fixed ideas | 3 | | 4 | | | | 2 | | | | | |
| Moral insanity | 1 | | 1 | | | | | | | | | |
| Total | 886 | 5.9 | 489 | 4.1 | 3 | 0.6 | 79 | 16.1 | 172 | 35.1 | 397 | 2.7 |
| VI. Epileptic Insanity | 647 | 4.6 | 456 | 3.8 | 1 | 0.2 | 31 | 6.8 | 277 | 60.7 | 191 | 1.3 |
| VII. Involution Group: | | | | | | | | | | | | |
| Involution psychosis | 493 | | 352 | | 39 | | 44 | | 142 | | | |
| Melancholia | 32 | | 27 | | 2 | | 6 | | 11 | | | |
| Chronic melancholia | 14 | | 35 | | | | 3 | | 21 | | | |
| Total | 539 | 3.6 | 414 | 3.4 | 41 | 9.9 | 53 | 12.8 | 174 | 42.0 | 125 | 0.8 |
| VIII. Paranoia | 251 | 1.7 | 252 | 2.1 | 1 | 0.4 | 39 | 15.4 | 86 | 34.1 | —1 | |
| IX. Undiagnosticated | 512 | 3.4 | 191 | 1.6 | 26 | 13.6 | 32 | 16.7 | 15 | 7.8 | 321 | 2.2 |
| Total insane | 14,770 | | 11,903 | | 2062 | 17.3 | 1297 | 10.8 | 5294 | 44.4 | 2867 | 19.5 |
| Not insane | 49 | | | | | | | | | | | |

The multiplicity of diagnoses in the hospital reports arises partly because some of the hospitals and physicians still adhered, during part of the five-year period, to the older nomenclature of acute and chronic melancholia and mania, etc., while the rest have adopted the Kraepelinian nomenclature to a greater or less extent; and partly to a tendency to use symptomatic names (as confusional insanity), or specific etiological names (as myxœdematous insanity), for cases which do not fall clearly within the larger Kraepelinian groups, yet which seem too definite in their nature or symptomatology to be put into the category of undiagnosticated. Not only for convenience, then, but because they seem to me to belong together, these 47 diagnoses have been distributed among nine groups.

### Organic Brain Disease Group.

The largest group is that of organic brain disease, in which there is known loss or destruction of nerve cells, whether through the late effects of a previous syphilis, or senile atrophy, or arteriosclerotic malnutrition, or pressure by tumors, or as the result of hæmorrhage or other trauma, embolism, or thrombosis. The reported diagnoses classed in this group are senile insanity, general paralysis, coarse brain lesion, organic brain disease, choreic insanity, the latter being undoubtedly the dementia of Huntington's chorea. The diagnoses in this group are probably pretty accurate, and the percentage of probable error is very small. Of this group 3609 cases were admitted, 24.4 per cent, or nearly a quarter, of all admissions; 3352 cases were discharged, 28.1 per cent of all discharges. There was but one alleged recovery, which was doubtless an error either in diagnosis or in estimation of the condition on discharge; 88, or 2.3 per cent of those belonging to this group who were discharged, were returned to the community able to work enough to support themselves; 2762, or 82.4 per cent of this group who were discharged, died, a very high mortality, as would naturally be expected. Prevention may be effectively applied to one-third of this group—general paralysis. Cures cannot be expected.

### Dementia Præcox Group.

The next largest group, nearly as large as that of organic brain disease, is the dementia præcox group, comprising 3585,

or 24.2 per cent of admissions, and 2813 or 23.6 per cent of discharges. The fundamental pathological condition underlying the symptoms of this large group is unknown, though recent investigations by Sioli[1] point to the possibility of definite cell changes being demonstrated. At all events the permanent mental defect suggests the probability of permanent brain-cell changes. It is possible that in a few cases the destructive process, if such there be, may be arrested before the damage it has done is irreparable, repair may take place, and recovery occur; but this is not often, and, in the absence of known pathology, there is always doubt of the correctness of the diagnosis in the cases that recover. I have classed as belonging to this group the diagnoses dementia præcox, paranoid condition, delusional insanity, chronic dementia, secondary dementia, chronic mania, obsessional insanity. The probable error of diagnosis in this group is considerably larger than in the previous one. More cases doubtless belong in this category than are here assigned to it, a large proportion of the undiagnosticated cases, some at least of the paranoia group, and probably some from the manic-depressive group, undoubtedly belonging here. On the other hand, some of the cases classed here probably belong in the manic-depressive group. The difficulties of diagnosis are largely among these two groups, and those of paranoia and involution psychosis. Of this group, 106, or 3.7 per cent, recovered; 356, or 12.6 per cent, became capable of self-support; while 1146, or 40.6 per cent, died. The rate of recovery or capability of self-support is quite low, the mortality pretty high. We do not yet know against what to direct preventive efforts, nor curative measures, as far as this group is concerned. Re-education of the demented, however, holds promise of some amelioration.

## Manic-Depressive Group.

The next group is the manic-depressive group, the fundamental change in which is *fatigue,* or a closely analogous condition, as it seems to me; that is, a diminution of functional capacity due to functional over-activity. It would take too much time to give the reasons for this belief, so I will not attempt it. The diagnoses

[1] Sioli: Histologische Befunde bei Dementia præcox. Author's abstract in Zentralbl. f. Nervenheilk. u. Psych., Mar., 1909, p. 220.

included under this head are numerous, including manic-depressive insanity, confusional insanity, neurasthenia, acute melancholia, hysterical insanity, acute mania, traumatic insanity, periodic or recurrent insanity, psychosis with somatic disease, insanity of pregnancy, exhaustion psychosis, amentia, compulsive insanity, acute hallucinosis, Graves' disease. I shall not attempt to defend this grouping, for, as in the case of the preceding group, the probability of error in diagnosis is fairly large, some cases classed here undoubtedly belonging to that group and *vice versa.* I will say, however, that I made this grouping of the diagnoses before determining the figures belonging to them, with the exception of traumatic insanity, which I first placed in the organic brain-disease group; but it was evident that the outcome of these cases precluded any permanent organic brain disease, and they were probably, therefore, rather of the accident neurosis type.

Of the manic-depressive group 2591 cases, or 17.9 per cent of all admissions, were admitted, and 2268 cases, or 19 per cent of all discharges, were discharged. Of the latter, 1054, or 46.4 per cent, recovered; 308, or 13.5 per cent, became capable of self-support, and 385, or 17 per cent, died. The recovery rate here is large, the mortality comparatively low. Believing, as I do, that fatigue is at the bottom of these cases, prophylaxis should be directed to education of the public in the perils of overwork, and treatment to the resting of these cases. Efforts in both directions should prove useful.

## Toxic Group.

The toxic group consists of those cases in which there is a known poison introduced into the system from without, as in alcoholism and other drug psychoses, or in which a toxæmia can be inferred on pretty strong grounds, as in the deliria of acute infectious diseases and the psychoses in which there is clearly demonstrable metabolic change. The grounds for asserting that dementia præcox, for example, is due to a toxæmia are, as yet, quite inadequate. The diagnoses included in the category of the toxic group are acute and chronic alcoholic insanity, acute and chronic toxic insanity, acute delirium, delirium with somatic disease, Korsakow's psychosis, myxœdematous insanity. Of this group, 2150 cases, or 14.5 per cent of all admissions, were ad-

mitted, and 1668 cases, or 14 per cent of all discharges, were discharged. Of the latter, 829, or 49.7 per cent, recovered, and 311, or 18.6 per cent, became capable of self-support; while 277, or 16.6 per cent, died. The mortality is comparatively low, while the proportion of cases recovered or capable of self-support is large, as would be expected. Here, again, prophylaxis through education of the public, and curative measures, should be especially fruitful.

### Defective Group.

The fifth group comprises the cases of imperfect development, and includes the diagnoses of imbecility, mental deficiency, psychopathic inferiority, constitutional inferiority, fixed ideas, and moral insanity. Of this group there were 886 admissions, 5.9 per cent of the total, and 489, or 4.1 per cent, discharged. Of the discharges, 3, or 0.6 per cent, were classed as recovered; this was doubtless an error of diagnosis or of estimation of condition on discharge, and probably arose from a defective having an intercurrent psychosis or an acute exacerbation of symptoms which completely subsided; 79 patients, or 16.1 per cent of the discharges belonging to this group, were capable of self-support; and 172, or 35.1 per cent, died. The proportion capable of independent existence is small, the mortality pretty high. The size of this group does not indicate the proportion of defectives in Massachusetts, but only of the defectives who become insane or are committed as such to the hospitals for the insane. In future generations something may be accomplished in the way of prophylaxis, and by wise treatment, much in the way of amelioration, of defect psychoses.

### Epileptic Group.

Epileptic insanity, the psychosis which sometimes develops in epilepsy, and which is of unknown pathology, comprises the sixth group. This does not include epileptics as such, but only the insane. There were 647 cases admitted, 4.6 per cent of all admissions; and 456 cases discharged, or 3.8 per cent of all discharges. Of the latter, 1, or 0.2 per cent of the discharges of this group, recovered; 31, or 6.8 per cent, became capable of self-support; and 277, or 60.7 per cent, died. The mortality is

very high, the proportion of these returned to the community as self-supporting individuals is small. Here, again, prophylaxis is difficult, and treatment is largely ameliorative.

### Involution Group.

The next group, a comparatively small one, includes the cases of depression coming first at the involution period of life, usually chronic, and leading to dementia, though not necessarily so. Dreyfus[2] has tried to show that they are really cases of manic-depressive depression, but his demonstration, though able, is not clearly convincing. Its pathology is unknown. The diagnoses included in this group are involution psychosis, melancholia, and chronic melancholia. Some of the cases here figured doubtless belong in the manic-depressive group, a few in the dementia præcox group, and possibly some in the organic brain-disease group. But since there are probably a few cases in each of those groups that would, if carefully diagnosticated, fall in this one, I assume that errors approximately balance each other, not only here but among the other groups as well. Of this group there were 539 cases, 3.6 per cent, admitted, and 414, 3.4 per cent, discharged. Of the discharges, 41, or 9.9 per cent, recovered; 53, or 12.8 per cent, became capable of self-support, and 174, or 42 per cent, died. The proportion of those able to support themselves, is rather small, the mortality is high. As in the case of the dementia præcox group, we are at a loss to know at what to direct our efforts at prevention and treatment.

### Paranoia Group.

This small group consists of those cases of delusional insanity which begin fairly early in life, and is characterized by the gradual evolution of a system of delusions which grows more and more extensive, until almost everything and everybody in the universe is involved in it; it is chronic in its course, and, progressively, more and more trivial things and events come to have significance as confirming the patient in his delusions. There is no loss of initiative, or of interest in the daily affairs of life, or of memory. The

[2] Georges L. Dreyfus. Die Melancholie: ein Zustandsbild des Manisch-depressives Irreseins. Monograph. Jena, 1907.

pathology is unknown. It is a comparatively infrequent form of insanity, much fewer cases arising than the figures here indicate. The diagnosis is often made in cases of manic-depressive insanity or dementia præcox or toxic insanity because of the elaborateness of the delusions that sometimes occur in these diseases. The numbers here given are large because one hospital reports twice as many cases of paranoia as all the other hospitals put together. There should be about 105 cases admitted, 0.7 per cent of admissions. But as the figures stand, of this group, 251 cases, or 1.7 per cent of the admissions, were admitted, and 252 cases, or 2.1 per cent of the discharges, were discharged. Of the latter, 1, or 0.4 per cent, was considered recovered; 39, or 15.4 per cent, were capable of self-support, and 86, or 34.1 per cent, died.

### Undiagnosticated Group.

Owing to the difficulties of diagnosis, this is a fairly large group, comprising 512 cases, or 3.4 per cent of admissions, and 191 cases, or 1.6 per cent of discharges. The difficulties of diagnosis lie chiefly between dementia præcox and manic-depressive cases, or between these and involution psychoses. As would be expected, the number of undiagnosticated discharges is much less than of admissions, prolonged observation serving to clear up some doubts.

### Summary and Conclusions.

From the foregoing figures it is apparent that nearly half the admissions (48.6 per cent) are of the organic brain disease and dementia præcox groups, and that these yield very few recoveries. Nearly one-third (32.4 per cent) of admissions belong to the manic-depressive and toxic groups, of which nearly half (47.8 per cent) recover. The remaining sixth of admissions is divided among the defective, involution, epileptic, paranoia, and undiagnosticated groups, in proportions varying between 5.9 per cent and 3.4 per cent of admissions, except in the case of the paranoia group. They furnish but few recoveries, of which a third are in the undiagnosticated group.

If we regard syphilis as the sole cause of general paralysis, more than a third of the cases of organic brain disease are preventable. Abuse of alcohol is the cause of 86 per cent of the cases of the

toxic group. These two preventable diseases constitute one-fifth (20.8 per cent) of all admissions. Prophylactic efforts may well be directed to the control and suppression of these two causes of insanity. Such suppression would indirectly diminish by an undetermined, but probably large, per cent the number of defectives and epileptics. Next in importance, so far as numbers are concerned, would be the prevention of unnecessary overwork, in the hope of diminishing the number of manic-depressive cases.

Until we have learned more by continued study of the causation and pathology of dementia præcox, curative measures will be most fruitfully employed in the manic-depressive and toxic cases, to increase the percentage of recoveries and diminish the number of deaths.

# HUNTINGTON'S CHOREA.

By W. H. HATTIE, M.D.,

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The offering I bring to you to-day is merely an addition to the large number of family trees which have been prepared to illustrate the importance of inheritance in the condition known as Huntington's chorea.

The charts indicate the incidence of this disease in the families and descendants of George M——l and his sister Mary M——l, in so far as I have been able to ascertain it by the rather unsatisfactory method of correspondence. I had planned to viisting the districts in which the disease is most prevalent in the hope of gaining more information than the charts show, but was unable to carry out this intention. As far as they go, I think that the charts are accurate, but they are not complete. Several of the patients indicated have come under my observation, and at least two others, who undoubtedly belong to this group, have been under my care, although I cannot, as yet, find the proper places for them in the charts.

The M——ls belonged to a party of Huguenots who left the town of Montbeliard, or its neighborhood (near the boundary between France and Switzerland), because of the religious persecution which followed the revocation of the Edict of Nantes. While several of the party chose to follow the lead of many of their compatriots and found their way to South Carolina, a number were attracted to Nova Scotia, where they established themselves in the county of Lunenburg, and there experienced the hardships and dangers of first settlers.

Following the peace of 1763, one Colonel DesBarres, a fellow countryman of theirs, who had served in the British army (and into whose arms, it is said, Wolfe fell at Quebec), was granted

a large tract of land at Tatamagouche, in Colchester County, on the northern coast of Nova Scotia, and in 1771 he induced some of those who had settled in Lunenburg to relocate in his domain. Eleven families responded to his request, and among them were the M——ls, with whose descendants we have now to deal, and also the forebears of the T——es, L——es, and P——ns, whose names appear in the charts. The families descendant from these original settlers have largely remained in the county of Colchester, and the restriction of the disorder, so common amongst them, to this locality was at one time attributed, by the laity, to some peculiar local condition.

Both George and Mary M——l suffered from Huntington's chorea, but of their forebears I have no knowledge.

Of George's immediate family the available information is scanty, and my record deals with but one daughter, who married a T——e. The issue from this marriage consisted of two sons and two daughters. Both sons and at least one daughter were choreic. The choreic daughter married a P——n, and four of her eleven children were choreic. Of these four, two at least married, one begetting three and the other one choreic children. Of T——e's sons, we do not know that more than one married. He had five children, of which at least one was choreic. As far as this record goes, therefore—and it is very incomplete—it is seen that 13 of the descendants of George M——l, distributed through four generations, suffered from the disease of which George M——l was himself a victim.

The chart of Mary M——l and her descendants is more complete, although it also is by no means free from omissions. Four of her six children, twelve of her twenty-one grandchildren, fifteen of her twenty-nine great grandchildren, and one of her fourteen great great grandchildren, or in other words, thirty-two out of her seventy descendants, of whom we have knowledge, were (or are) choreic. But few of the great great grandchildren have reached the age at which the disorder commonly becomes manifest, and it is reasonable to assume that further research will discover other cases among less recent generations, so it is quite likely that fully more than half of the descendants of this

woman have been, are, or will become victims of the malady from which she suffered.[1]

It is scarcely necessary to recall to your memory that the nervous disorder with which the name of Dr. George Huntington is associated, is notable because of a marked tendency to transmission from parent to offspring. It usually becomes manifest about the age of 30 or 35; it is characterized by involuntary and inco-ordinate muscular movements which have some resemblance to the movements of chorea; it very commonly leads to marked mental reduction, and Huntington and others have thought that suicide is disproportionately common amongst its victims.

The charts illustrate in a striking manner the tendency of this disease to be transmitted from parent to child. They also show, less completely, that if one generation escapes it, it does not reappear in succeeding generations.

In a general way, the cases of which I have fairly full information are well described in Huntington's original article. I have, however, not been able to learn that suicidal tendencies have been noted unusually often in the group under study. From several sources I have been informed that intemperance in alcohol characterizes so many members of the families included in the group that it is a lay belief that the disease is a result of alcoholism. Numerous choreic patients, however, have not been intemperate. The neuroses do not unduly afflict these people, although many of them are of a somewhat inferior type, lacking in ambition and ability. Mild motor manifestations, especially involuntary movements of the head and tremor about the mouth, are not infrequently seen in cases which do not become more definitely choreic. Such mild cases are not included in my charts.

[1] Since this paper was read I have seen another case in the fifth generation, a second great great grandchild, making thirty-three descendants of Mary M——l who have had the disease. The chart has been corrected to conform with this last observation.

Charts showing incidence of Huntington's Chorea in the families and descendants of George M . . . . . L and his sister Mary M . . . . . L, presented to American Medico-Psychological Association, June 2, 1909

(Names printed in bold font type represent patients who have suffered from Huntington's Chorea)

## DESCENDANTS OF GEORGE M . . . . . L

- **GEORGE M . . . . L**
  *m* . . . . . ?
  - Thos. M . . . . . l
  - Simon M . . . . . l
  - John M . . . . . l
  - **MARY ? M . . . . . L**
    *m* T . . . . . e
    - **ANNIE T . . . . . E**
      *m* P . . . . . n
      - **ROBERT P . . . . N**
      - **GEORGE P . . . . N**
      - **WM. P . . . . . N**
        *m* . . . . . ?
        - **MAGGIE P . . . . N**
          *m* . . . . . ?
          - (young children)
        - **MAUDE P . . . . . N**
        - Mary P . . . . . n
        - **ALICE P . . . . . N**
        - Arthur P . . . . . n
          *m* . . . . . ?
          - (young children)
        - Ivan P . . . . . n
        - John P . . . . . n
          *m* . . . . . ?
          - (young children)
        - Wm. P . . . . . n
          *m* . . . . . ?
          - (one child)
        - Daughter
          *m* . . . . . ?
          - (one child)
        - Daughter
      - . . . . . (normal)
      - . . . . . (normal)
      - . . . . . (normal)
      - . . . . . (normal)
      - . . . . . (normal)
      - . . . . . (normal)
      - **MARGARET P . . . N**
        *m* Peter B . . . . . y
        - **PETER B . . . . . Y**
        - Archibald B . . . . . y
        - Several others—residence and condition unknown
      - Bridget P . . . . . n
        *m* William S . . . s
        - (children normal)
    - Daughter (normal)
    - **LEVI T . . . . . E**
    - **DAVID T . . . . . E**
      *m* Isabella L . . . . r
      - **DUNCAN T . . . . E**
        *m* . . . . . .
        - (young children)
      - Daughter . . . . . .
        *m* Simon P . . . . n
        - (children normal)
      - Sumner T . . . . . e
      - Annie T . . . . . e
        *m* S . . . . . t
        - (young children)
      - Evan T . . . . . e
        *m* . . . . . ?
        - (young children)
  - Peter M . . . . . l

Charts showing incidence of Huntington's Chorea in the families and descendants of George M . . . . . L and his sister Mary M . . . . . L, presented to American Medico-Psychological Association, June 2, 1909

(Names printed in bold font type represent patients who have suffered from Huntington's Chorea)

## DESCENDANTS OF GEORGE M . . . . . L

- **GEORGE M . . . . L**
  *m* . . . . . ?
  - Thos. M . . . . . l
  - Simon M . . . . . l
  - John M . . . . . l
  - **MARY ? M . . . . . L**
    *m* T . . . . . e
    - **ANNIE T . . . . . E**
      *m* P . . . . . n
      - **ROBERT P . . . . N**
        - **MAGGIE P . . . . N**
          *m* . . . . . ? . . . (young children)
        - **MAUDE P . . . . . N**
        - Mary P . . . . . n
        - **ALICE P . . . . . N**
        - Arthur P . . . . . n
          *m* . . . . . ? . . . (young children)
        - Ivan P . . . . . n
        - John P . . . . . n
          *m* . . . . . ? . . . (young children)
        - Wm. P . . . . . n
          *m* . . . . . ? . . . (one child)
        - Daughter
          *m* . . . . . ? . . . (one child)
        - Daughter
      - **GEORGE P . . . . N**
      - **WM. P . . . . . N**
        *m* . . . . . ? . . . (young children)
      - . . . . . (normal)
      - . . . . . (normal)
      - . . . . . (normal)
      - . . . . . (normal)
      - . . . . . (normal)
      - . . . . . (normal)
      - **MARGARET P . . . N**
        *m* Peter B . . . . . y . . . **PETER B . . . . . Y**
        Archibald B. . . . . y
        Several others—residence and condition unknown
      - Bridget P . . . . . n
        *m* William S . . . s . . . (children normal)
    - Daughter (normal)
    - **LEVI T . . . . . E**
      - **DUNCAN T . . . . E**
        *m* . . . . . (young children)
      - Daughter . . . . . (children normal)
        *m* Simon P . . . . n
  - Peter M . . . . . l

# DESCENDANTS OF MARY M. . . . . L

- **MARY M. . . . . L**
  *m* George J. . . y
  - **JANE J. . . . . Y**
    *m* William L. . . e
    - **JAMES L. . . . . E**
    - **GEORGE L. . . . E**
    - Murray L. . . . . e (died young)
  - **GEORGE J. . . . Y**
    *m* Eliza L. . . . e
    - **SUSAN J. . . . . Y**
      *m* C. B. . . . . n
      - George B. . . . . n
      - Isaac B. . . . n (insane)
      - **DOLINA B. . . . N**
      - Alexander B. . . . . n
      - Howard B. . . . . n
      - **LOUISE B. . . . N**
      - Sophia B. . . . . n
    - **CAROLINE J. . . Y**
    - **MARGARET J. . Y**
  - Peter J. . . . . y
    *m* Susan G. . . . n
    - Lawrence J. . . . . y
  - **BENJAMIN J. . . Y**
    *m* . . . . . ?
    - William J. . . . . y
    - Benjamin J. . . . . y
    - **ELIZA J. . . . . Y**
    - **NANCY J. . . . . Y**
    - **MARY J. . . . . Y**
      *m* Edward L. . . e
      - **ELIZABETH L. . E**
        *m* George L. . . . e
        - George L. . . . . e
          *m* . . . . . ? (young children)
        - John L. . . . . e
          *m* . . . . . ? (young children)
        - **ABRAM L. . . . . E**
        - Carl L. . . . . e
        - Dolina L. . . . . e
        - Susan L. . . . . e
        - Agnes L. . . . . e
        - Henry L. . . . . e (died young)
      - **JOSEPH L. . . . . E**
      - Benjamin L. . . . . e
      - James L. . . . . e
      - Jane L. . . . . e
  - Jacob J. . . . . y
    *m* Nellie T. . . e
    - Woodbury J. . . . . y
    - Roderick J. . . . . y
    - Esther J. . . . . y
  - **JAMES J. . . . . Y**
    *m* Jane B. . . . y
    - **GEORGE J. . . . Y**
      *m* Eliza (or Jessie) L. . . . e
      - **BENJAMIN J. . Y***
      - **DAVID J. . . . . Y**
        *m* Margaret A. . . s
        - **JAMES A. J. . . . Y** (aged 35)
        - Burton J. . . . . y (aged 32)
        - Lawrence J. . . . . y (aged 28)
        - Jessie J. . . . . y (aged 26)
          *m* Alex. U. . . . . t
        - May J. . . . . y (aged 24)
          *m* George H. . . . l
        - Alfred J. . . . . y (aged 20)
      - **CHRS'PHR J. . . Y**
      - **CASSIE J. . . . . Y**
      - Caroline J. . . . . y
        *m* M. . . . . l
    - **JAMES J. . . . . Y**
      *m* Mary (or Nance) M. . . l
      - **JOHN J. . . . . Y**
      - **MARK J. . . . . Y**
      - **CALEB J. . . . . Y**
        *m* Ruth S. . . . . e
        - Mattie J. . . . . y (aged 22)
          *m* Purdy D'A. . . r (young children)
        - Mary J. . . . . y (aged 25)
          *m* Freeman G. . . s (young children)
        - Marjorie J. . . . . y (aged 17)
        - Bertha J. . . . . y (aged 15)
      - **THOMAS J. . . . Y**
      - Ellen J. . . . . y
        *m* John P. . . . . s
        - Lettie P. . . . . s
          *m* John F. . . . . r
      - Eliza J. . . . . y (died at 17)
    - Benjamin J. . . . . y
    - **PETER J. . . . Y***
      *m* Sarah M. . . . l
      - Jacob J. . . . . y
      - **ABRAHAM J. . . Y**
      - Susan J. . . . . y
    - Jacob J. . . . . y
      *m* . . . . . ?
    - **WILLIAM J. . . Y**
      *m* 1. Eliza D. . n
      2. Elizabeth F. . s
      - **JAMES J. . . . . Y** (1st wife)
      - **DANIEL J. . . . . Y** (2nd wife)

* Information about Peter J. . . . . y and Benjamin J. . . . . y is not positive, but suspicious

# BORDERLAND CASES OF INSANITY AND THE VOLUNTARY PATIENT.

By ALBERT WARREN FERRIS, A. M., M. D., New York,

*President of the New York State Commission in Lunacy.*

Rarely does a physician experience as great satisfaction as that which attends the recovery of an insane patient. If skilfully adjusted occupation and diversion, special individual study and care, and personal suggestion result in the emergence of the patient, the medical attendant has received his highest recompense. Scarcely less valuable than his services are those of the physician who lifts to a higher plane the chronic case and makes the most for an irrecoverable patient of the remnant of life's enjoyment that is left him.

While relief from distress and cure of disease are generally considered by the thoughtless to be the whole duty of the physician, these do not in reality compass it; for prevention is the greater duty as it is the crowning achievement. Humanitarian, sanitarian, psychologist, and publicist the capable physician must be, and his arena is the world.

Over the entrance to the surgical amphitheatre of St. Come, Paris, are inscribed the words: "*Ad cædes hominum prisca amphitheatra patebant, ut discant longum vivere nostra patent.*" That is, "The amphitheatres of old were open for the slaughter of men, ours that they may learn to prolong life." Not only to prolong life does the modern Æsculapian enter the arena, not only to give successful battle to disease, but also to indicate undermining agencies, to avoid and remove causes of disease, and even to baffle heredity. This the psychiater of to-day accepts as his function and office.

We are led by habit of superficial thought, and by the subtle appeal of the artist to our emotional instincts, to accept the historic statement that the picture of Pinel, striking off the shackles from the wrists and ankles of lunatics at Bicêtre, represents the earliest

acceptance and practical result of the truth that penal repression of the insane is not necessary treatment, but is mere brutality. His moral intrepidity undoubtedly stimulated and encouraged the world, and paved the way for the conviction and action of Tuke, Hill, and Conolly in England, of Everts in Holland, and of Rush in the United States. But the fact is that in 1751, when Philippe Pinel was but six years old, the Pennsylvania Hospital in Philadelphia was founded largely because of the statement in the first clause of the petition for its charter. The petition, written by the hand of Benjamin Franklin, in its first paragraph

"Humbly showeth

That with the Numbers of People, the number of Lunaticks or Persons Distemper'd in Mind and depriv'd of their natural Faculties, hath greatly encreased in this Province."

The hospital was established in large part "for the care and treatment of Lunaticks," and thus early was the truth recognized that the insane are ill and deserve, as well as profit by, treatment. The petition sets forth in its third paragraph:

"That few or none of them are so sensible of their Condition as to submit voluntarily to the Treatment their respective Cases require, and therefore continue in the same deplorable State during their Lives."

Here is an ancient record of the conviction of the desirability of voluntary application and of the benefits of early treatment.

Statistics regarding the insane population in the State of New York confront us with two most grave and significant facts:

First. The total number of cases of insanity admitted during the last fiscal year was 6681, against an average of 5539 for five preceding years, thus furnishing us with a net increase of 1246, against an average net increase of 766, for the five preceding years.

Second. While the annual death rate in the State hospitals for the insane is 8 per cent of their population, 40 per cent of all the deaths occur during the first year after admission, and 15.6 per cent of the new cases die during their first year of residence in the hospitals.

The first fact necessitates immediate and energetic action to

limit the production of insanity by instruction of the public throughout the whole State concerning the precipitating factors in the causation, emphasizing the avoidable causes, and uncovering to the youth and the adult the actual agencies that can be controlled, and the actual measures that can be taken to preserve mental integrity. Such action will consist in plain and forcible presentation of the subject of syphilis and its results; the subject of the use of alcoholic beverages in so-called "moderation," as well as in excess; and the subject of drugs, such as morphine, cocaine, and chloral.

The fact of our net increase of 61 per cent more than in previous years suggests not only the necessity for education of the people, but also the emphatic desirability of placing the insane under earlier treatment. But much more forcibly is this necessity stated in the fact of the early death of 15.6 per cent of our newly admitted. Many of these are suffering from infection-exhaustion psychoses, a few are aged or bedridden patients. Many have suffered so long that their psychoses are deeply fixed, and they are in a condition of dread, antagonism, confusion, or enfeeblement, which interferes with immediate examination, and constitutes a barrier to early access to the personality. If brought more promptly into reception wards they would, in many instances, never have progressed so far, and their recovery would have dated from an earlier period.

The early case, the borderland case, must be put under treatment. The question arises, What is a borderland case? Meyer, with characteristic practicality, answers: "Any case that can be benefited by hospital treatment;" that is, any case in which symptoms of commencing mental trouble have been noticed, and which should have a psychiatrist's care. Within the area of the borderland we must include psychasthenia, with its impulsions, obsessions, doubts, phobias, anguish, agitation, and delirium of touch; and for practical purposes we must also include all psychoses in their incipiency; we must include psychopathic exaltation and psychopathic depression; constitutional inferiority; disorders in the train of thought, disorders of volition, of the emotions, of memory, of attention, and of personality, whenever such disorders are more than transient. It seems trivial to say it (yet this

truth must be impressed upon the thoughtless community by the physician) that, as soon as the teacher or the parent or other relative discovers such disorders and decides that they are more than transient, he should take alarm and seek medical advice for the patient. If, owing to congenital defect, mental development is retarded, the child should have the advice of a psychiatrist. If under the stress and strain of an exacting life an adult begins to "break down," immediate medical relief should be secured. The term "over-work" is relative to the constitutional equipment and to the mental and physical health of the individual. The toxic substances which are produced by activity, and which cause fatigue, are not, in some instances, easily eliminated. We know that rest does less for the recuperation of a fatigued muscle than irrigation with a stream of fresh blood. Given plenty of good blood and an opportunity to rest, but one agency in addition is requisite to restore fatigued muscles, and that is sleep. Insomnia, though a common symptom, is always a grave one in the psychasthenic.

To afford as far as possible opportunities for early relief of the borderland case, New York State, which had for many years authorized licensed private houses to receive voluntary patients, in 1908 amended the insanity law and threw open her 13 civil State hospitals for the reception, without commitment and on their own application, of patients whose minds are not so impaired as to render them incapable of forming a rational judgment or to render them incapable of resisting influence.

Since the change in the statute, comparatively few voluntary patients have taken advantage of the opportunity to enter the State hospitals, the small number being due, apparently, to want of information or apathy of the general practitioner; to the idea persistent among the laity that real insanity is always marked by violence; and to the feeling that possibly recoverable cases of mental disorder should be kept at home, the hospital being regarded by some citizens as merely a receptacle for the desperate or hopeless cases. Too much stress cannot be laid on the importance of instructing the general practitioner and the public to the effect that medical care of the insane should begin before the time when sufficient mental change has occurred to make a commitment possible.

Of the 71 cases received on voluntary application into the New York State hospitals between July 1, 1908, and April 1, 1909, 40 were men and 31 were women. Their ages ranged from 13 to 77, and but 6 were over 60 years of age. The following is the classification of the psychoses:

| | |
|---|---|
| Manic-depressive insanity | 15 |
| Allied to manic-depressive | 1 |
| Dementia præcox | 5 |
| Allied to dementia præcox | 1 |
| Alcoholic psychosis | 5 |
| Acute alcoholic hallucinosis | 1 |
| General paresis | 4 |
| Involutional melancholia | 3 |
| Paranoic condition | 3 |
| Hysterical psychosis | 3 |
| Constitutional inferiority | 3 |
| Psychasthenia | 3 |
| Depression not sufficiently distinguished | 3 |
| Hypochondriacal depression | 2 |
| Anxiety psychosis | 2 |
| Symptomatic depression | 1 |
| Morphia psychosis | 2 |
| Arterio-sclerosis symptom-complex | 2 |
| Epileptic psychosis | 1 |
| Organic brain disease | 1 |
| Dementia paranoid | 1 |
| Infection-exhaustion psychosis | 1 |
| Unclassified, a syphilitic with confusion episodes and arm weakness | 1 |
| Not insane | 7 |

Of these patients, 29 represented readmissions, including 12 cases of manic-depressive insanity, one case allied to manic-depressive, three cases of alcoholic psychosis, two cases each of paresis, paranoid condition, dementia præcox, psychasthenia, and hysterical psychosis, and one case each of acute alcoholic hallucinosis, constitutional inferiority, and depression not sufficiently distinguished.

The fact that 40 per cent of the patients were readmissions is an indication of growing confidence in the friendly offices of the State hospital.

The great desirability, for both individual and family, that cases of manic-depressive insanity should be placed under early

treatment leads us to experience especial satisfaction in the fact that 23 per cent of these voluntary patients were sufferers from this form of psychosis.

The services of the hospitals were of distinct value to the community in the instances of the 14 patients who cannot be cured. Of these, two were paranoic, one of whom was removed by friends in a few days, while the other was committed; four were general paretics, including two concerning whom the diagnosis is still *sub judice,* and one who was committed two months after admission, his family being thereby saved from disgrace and financial loss; and one who died in six weeks. The case of dementia paranoid left in five days, much improved by rest and catharsis; the case of organic brain disease is a hemiplegic, with incapacity and depression; the epileptic will probably improve so far as to be sent to the epileptic colony when a vacancy occurs; of the two cases of arterio-sclerosis symptom-complex, both over 60 years of age, one was discharged much improved after a trial; one of the three cases of constitutional inferiority is over 62 years old and not hopeful for future self-support, one was committed, and one reacted naturally during a week's observation and was discharged.

Analysis of the six alcoholic cases (less than 8.5 per cent of the total) should reassure the timid souls who loudly prophesied that the voluntary patients would necessarily consist largely of inebriates in search of a refuge in which to recover from a debauch. The victim of acute alcoholic hallucinosis was a readmitted case who suffered from a definite psychosis, and will be discharged in all probability in three months. Of the five cases of alcoholic psychosis, two were committed as insane under the statute, one was discharged in three days, one with a persecutory trend of ideas is improving much, and the remaining one shows a resemblance to Korsakoff's psychosis.

The seven who were found not insane and were promptly discharged comprised the following:

An alcoholic clergyman, who had mentioned suicide; a barber, who was depressed and nervous; a farmer's daughter of 13, who presented disorder in the content of thought, consisting of frequent panics caused by fear of choking and of impending death, and of which she was relieved by direct suggestion and

sensible advice; an alcoholic physician, who while in the hospital dishonorably procured liquor surreptitiously; a weak, excited, talkative farmer; an alcoholic and quarrelsome jeweler; and an emotional pupil nurse. Although, with the exception of the young girl, these were unsuitable for our State hospital treatment, the reception and discharge of these sane patients will be of value in reassuring the community, and in increasing confidence in the hospitals.

There is a very great economic value in the voluntary admission of the incipient case. The average life of the committed patient in a hospital is nine years. It is well known that very early treatment would shorten vastly the duration of the curable psychosis, and would rescue some patients from a nine years' residence. The State is saved from the average expenditure of from $1288 to $1472 for every possible nine years' patient who is discharged at the end of one or two years' treatment. Besides this outlay we must reckon the loss to the Commonwealth of the services of each citizen as producer or worker, roughly stated as $200 a year or $1800 in nine years. If recovery takes place in one or two years, $1400 to $1600 of the value of his life is saved to the patient described who recovers promptly. With early treatment and early recovery, therefore, the State would save on the average $2688 to $3072 on each such patient.

The effect of the presence of voluntary patients on nurses and attendants is excellent, for they must prove corrective in the case of nurses who are disposed to be summary, dictatorial or harsh, and they certainly are more intelligently helpful. The effect upon committed patients is valuable through the example set in activity in occupations, industries and games, and in general encouragement.

The undoubted prophylactic value of voluntary admissions is suggested by the case of one woman who was advised to apply by a sister who had recovered from insanity in a State hospital. Willingness to go to a State hospital certainly includes willingness to receive from the hospital physicians rules and directions for home life which may improve environment and remove precipitating factors of insanity.

The experimental period for New York State has ended, and the trial of voluntary admissions is abundantly successful and full of promise.

## DISCUSSION.

Dr. Mabon.—It is a great pleasure to say a few words in reference to this very well presented subject.

The State of New York has gone a great ways in advance in introducing and carrying through the measure for providing for voluntary commitments, but in order that this may be brought to its greatest value the State has a further obligation to perform. It should provide for this class of patients entirely different accommodations than are provided for the reception of the general run of cases. It should provide a building suitably equipped that will remind a patient of a sanitarium rather than of an institution for the insane, where these voluntary borderland cases or incipient cases can be placed in the very best surroundings without coming in touch with the ordinary insane and becoming frightened.

We have an appropriation this year for several new buildings, and it is in my mind to try to arrange one of the buildings for this very class of patients. The fact that so few have applied is due in part to the fact that so few people are acquainted with the law, and in the second place those who are acquainted with it hesitate about coming to a general institution for the insane. Just as soon as you provide special accommodations for this class, you will find that patients will come in in larger numbers, and the result will be most gratifying.

Dr. H. M. Hurd.—I confess to a feeling of disappointment in learning that only seventy-one persons in the great State of New York had applied for voluntary commitment during the past year. It seems to me that there must have been something peculiar in the relation of those patients to the institution that there should be so few.

I desire to ascertain what the result has been in those States where a voluntary commitment law has existed for some years. I should like to know whether patients have been admitted to those institutions in any greater number.

Dr. Copp.—The Westborough (Massachusetts) Hospital admitted last year seventy-six voluntary patients. This hospital cares for about one thousand patients and has averaged for some years to admit about one in ten on the voluntary basis. The McLean Hospital, which is a private institution caring for about two hundred patients, has for some years admitted one-half, sometimes more, of all its patients on the voluntary basis. Aside from these institutions, the State hospitals have not made very great use of the voluntary form of admission.

The State hospital superintendents have found some difficulty in satisfying such patients so that they would remain voluntarily for any considerable time. I think their experience emphasizes the necessity of making special provision for this class, as suggested by Dr. Mabon. At the same time every effort should be made in our large public institutions to establish the voluntary relation between physicians and nurses and the patients under

their care. Unconsciously we assume an air of authority and fail to maintain that sympathetic relation with our patients which is most conducive to their welfare.

Originally this form of admission was restricted to patients whose mental condition did not allow of court commitment. This restriction has been removed, so that now any patient who is mentally competent to make application may be received as a voluntary patient.

Another limitation of the use of the voluntary form of admission was the absence of any provision for the support of indigent patients. Only private patients could be received in this way. It is now, however, permissible, with the approval of the State Board of Insanity, for an indigent patient to be supported by the State.

The removal of these restrictions will undobtedly lead to more frequent use of this law in our State hospitals.

Dr. Burr.—It is an interesting fact to me that a certain number of cases of paretic dementia were among the voluntary admissions. A query arises whether they came to the institutions of their own idea or were sufficiently urged by their friends. If the former, it only confirms recent impressions of my own, that the mental manifestations of paretic dementia are becoming less uniform. I have had two cases where there was a very acute appreciation of the condition, and this, notwithstanding the sometime existence of extravagant delusions and certain other symptoms we associate with the classical form of the disease. That a paretic patient should be able to decide to go to an institution of his own motion is a very good indication of the existence of the logical faculty—or at least that it is not wholly annihilated.

Dr. Brush.—Eighteen years ago, when I went to Maryland, I found on the statute books a law permitting voluntary admissions. The law was cumbersome. It authorized the superintendent to detain a patient in the hospital for three months. After that the lunacy board could commit him for another period, if in its opinion further detention was necessary. On consulting a hospital attorney we were at once advised that it did not seem wise to him to put it into effect owing to certain defects in it. We then determined to admit voluntary patients upon their simple written request to be received into the hospital for the purpose of care and treatment, and a written agreement to give at least two days notice in writing of their desire to leave. From that time on we have continued to receive voluntary patients and, accordingly, our admissions of this class have gone up to 50 per cent or over of the total admissions. Last year, with an average population of one hundred and fifteen and an admission of one hundred and eighty-six, one-half were voluntary patients and every single one of them could have been committed. We do not admit alcoholics and other habit cases. Three or four of them were paretics. This does not include patients who came there voluntarily and were necessarily afterwards com-

mitted. The 50 per cent referred to came voluntarily, remained voluntarily until discharged or still remain voluntarily under care.

We have had no trouble whatever in any case, with one single exception, and that a curious one occurring within the last few weeks. A patient who applied for admission representing himself to be in a condition of neurasthenia, denying any alcoholic habit or drug addiction, was admitted upon his voluntary request. When he arrived at the hospital he was in a state of intoxication. I was at my house and one of my assistants telephoned me of his condition; my first impression was to turn the man away, but thinking that possibly he had stimulated himself up to the point of getting to the hospital, I told my assistant to admit him. He staid with us three days and he is now suing us for $10,000 for damage to his health by being placed among insane patients, asserting that we had caused him great harm thereby. It is needless to say that we are not at all anxious as to the results of the suit, but that is the only case in which we have had any difficulty whatever. We make it a rule when patients who have come voluntarily get into a state into which they can no longer appreciate their status, or when they demand their discharge, to require their friends to secure the commitment required by law, or remove the patient.

Dr. Pilgrim.—I think the criticism of Dr. Ferris' very interesting paper regarding the small number of patients admitted can be readily met by stating that the practice is entirely new in our State. Ordinary people, and even the physicians, have not yet become acquainted with the provision of the law which enables us to receive voluntary cases. I know at Poughkeepsie that the number is steadily growing and every week we have an increased number of applicants for voluntary admission.

Two very curious cases have occurred within the past few weeks in which patients eloped, or escaped, who had been away from us, one as long as five or six months, and the other only four or five weeks, both of whom came back, requesting us to take them back as voluntary cases. They are perfectly willing to stay with us as voluntary patients, but are not willing to stay if committed.

Dr. E. H. Howard.—Dr. Pilgrim has said part of what I thought should be said, that in some sections of the State the law has been considered experimental and somewhat doubtful by the committing physicians and occasionally by the relatives and once in a while by patients themselves. Occasionally a patient will come to the hospital as a committed patient under the impression that he has come as a voluntary patient and has spoken to me several days afterwards about coming as a voluntary patient. On inquiring into the matter we would find that the friends or the committing physicians thought the hospital would be in better position to care for the patient if he came as a committed case, so they did not take advantage of this provision. I think, too, that in some of the hospitals in the State the superintendents themselves and the assistant physicians who are

consulted have rather advised that patients come as committed rather than as voluntary patients.

Dr. Carlos F. Macdonald.—When the proposition to provide statutory regulation for the admission of voluntary patients to the State hospitals was first brought forward by the New York Lunacy Commission, I confess I had some misgivings as to the wisdom of admitting voluntary patients to the hospitals and giving them the benefit of free treatment, even though such treatment might prove to be prophylactic or semi-preventive, the ground of my objection being the fact that the State hospitals are always overcrowded with actually insane patients. In fact, I have never known a time within my recollection, covering a period of nearly forty years, when the public institutions for the insane, in the State of New York, were not overcrowded, and I think this has been the condition generally throughout the United States and Canada, and probably throughout the civilized world.

When adequate accommodations for the committed insane who, having nowhere else to go, must be received in State hospitals, are not available, it seemed to me unwise to overcrowd the hospitals still further by admitting voluntary cases and thus opening the door to so-called "nervous patients," who might be glad to avail themselves, without cost, of the comfortable surroundings and care offered by the State hospitals. I think the suggestion of Dr. Mabon, to provide special accommodations and special environment for such cases outside of the hospitals for the insane, would be the best solution of the problem. This, in my opinion, would be a most excellent provision and one that would mark a decided step in advance as regards the prophylaxis of insanity.

As regards the admission of voluntary cases to private institutions for the insane, a provision was made by the First Lunacy Commission of New York for the admission of these cases to such of the private institutions as are conducted on what is known as the family plan. I have had considerable opportunity of observing the operation of this provision in that class of institutions and have found that it works admirably and I believe that it results, in many cases, in arresting an impending attack of insanity.

Respecting the voluntary admission of so-called habit cases, that is alcoholic and drug habitues, much difficulty and embarrassment have been encountered, owing to the fact that such patients, when in their penitent moods, readily assent to placing themselves under treatment, as voluntary patients, but in a short time, often within a day or two, when the craving for the accustomed stimulant or drug returns, they demand release and leave the institution, there being no legal means of detaining them. In view of the character of these cases and their tendencies, as mentioned, I sometimes question the wisdom of undertaking to do much for them, as owing to the brevity of their stay, they receive no benefit and are no credit to the institution receiving them. There is, however, another class of voluntary patients, namely, neurasthenics and borderland mental cases who remain longer under treatment and derive great benefit therefrom and who

take pride in the fact that they were not committed. For such cases I think the provision for voluntary admission is a most admirable one.

Dr. Dewey.—I am very glad to hear this question discussed. I believe it is an important one. It is surely needed to bring out the views in regard to it. There has been a good deal accomplished in certain communities or States and almost nothing done throughout the country generally, and it is evident that education is necessary even for our own profession to bring to their attention the importance of voluntary admissions. In the institutions I think, as Dr. Macdonald stated, voluntary commitments would come to many of them that are overcrowded, as rather an inconvenience. A patient coming of his own accord seems a sort of a "misfit" in the prevailing order of things. To relieve that situation the preparation of proper environment and surroundings for voluntary cases is important. The voluntary cases would most of them very likely be best provided for in surroundings of their own, buildings of their own, and yet there would be individuals who would have to be associated with the other insane. The fact is the thing needs to be very much studied and discussed before we are ready for it in the country in general, but it is a question that ought to be gone into carefully. And I believe voluntary commitments ought to be recognized and provided for.

Dr. G. S. Adams.—With regard to Dr. Dewey's remarks, I would say that in the Westborough Hospital, where we receive 10 or 12 per cent of the cases in all voluntarily, we are segregating our recent cases from the others.

In 1898 we first erected a building which we deemed sufficient for all the acute cases, but soon found that the disturbed cases gave considerable trouble to the quiet ones, so we had erected another building for recent noisy cases whom we considered recoverable. This building was intended for both sexes, but there were women enough to fill it, so we are now erecting a similar building for male disturbed cases. Most of the voluntary cases received go to our building for quiet cases and they see very little to remind them of an institution. If they become disturbed they go to the building for disturbed cases.

To make segregation successful, provision should be made not only for voluntary cases, but for the quiet or depressed committed cases suitable for such surroundings. Segregating the recent insane cases from the others makes that department a hospital and the other buildings really become an asylum.

Dr. Kilbourne.—This winter we had a law passed providing for voluntary admissions and also providing appropriations for separate buildings for these cases. In case it is necessary to commit them afterward, provision was made for a commission of resident physicians in the town in which the hospital is located to summon them before the probate judge and commit them to the institution proper. Inasmuch as we have not any buildings yet, we have not been able to carry out the provisions of the law.

Dr. Ferris.—In elaboration of what Dr. Macdonald has said, I would like to add that the permission to admit voluntary patients into private houses has existed since 1898, and a very large proportion of such cases go to those establishments. I think one thing that militates against our receiving many voluntary patients into the State hospitals at the start is that many call them "voluntary commitments." We ought to drop that term, and call them voluntary admissions, as there is no commitment in these instances.

As to the alcoholics, they are not admitted at all under this law and under the regulations established by the commission, unless they have some definite psychosis, and are not simply inebriates. If mere inebriates are inadvertently admitted, they are promptly discharged. One speaker considers it a strange condition of affairs under which a paretic would apply for voluntary admission. I think Griesinger is authority for the statement that pupillary anomalies are sometimes found in general paretics three years before the mental symptoms arise. An occasional paretic is perfectly able to carry on his work until certain mental symptoms develop. During my service at the Department of Neurology of Vanderbilt Clinic, New York City, I saw a case of general paresis who applied for relief of mental trouble; he was a railroad employee, at work in a signal tower. There is a period during which the paretic realizes that something is wrong, though it may not last long.

Under our law voluntary patients are required to give five days notice before leaving, affording an interval in which they may be examined and committed if they have become insane under the statute.

# AN ANALYSIS OF PSYCHOSES ASSOCIATED WITH GRAVES' DISEASE.

By FREDERIC H. PACKARD, M. D.,

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The not infrequent occurrence of a psychosis in the course of Graves' disease gives rise to such questions as: Is there a relation between the Graves' disease and the psychosis? If so, what is that relation? Do the psychoses occurring under such circumstances correspond in character to the various recognized psychoses, or do they show such characteristics as should entitle them to special classification? What is the prognosis in such cases? etc.

With the hope of answering these and some other questions I have undertaken an analysis of 82 cases presenting psychoses associated with Graves' disease. A few cases were patients at the McLean Hospital; most of the cases were collected from the literature.

As is well known, the diagnosis of Graves' disease is frequently made without the presence of all the classical physical symptoms, and frequently when the symptoms are very slight, so much so at times as to make the diagnosis doubtful. Among the cases to be here considered, however, the physical symptoms were in each instance tolerably well marked.

The interest in Graves' disease has for many years been considerable, and its frequent association with a psychosis has been noted. Many articles with reference to its etiology, and especially with reference to its treatment, have been written, and have aroused considerable interest. Many of the authors, however, have been general medical men or surgeons, and the psychiatric side of the question has been comparatively neglected. For many years such psychoses as were observed were considered to be the direct result of the Graves' disease, and have often been classified as Graves' psychosis. In text-books of psychiatry usually little

or nothing is to be found concerning this subject. More recently attempts have been made to answer some of the questions above, and the analyses of a few cases here and there have given rise to some doubt as to the direct relationship between Graves' disease and the psychoses associated with it. Numerous opinions have been expressed, some to the effect that both the Graves' disease and the psychoses had a common etiology based upon auto-intoxication or inherited degeneracy; and some, recognizing the similarity between many of the psychoses seen with Graves' disease and in manic-depressive insanity, have gone so far as to suggest that in all cases of manic-depressive insanity we have as an etiological factor some disease of the thyroid. It will not be attempted to discuss these various theories, but merely to present an analysis of the cases collected and to draw some conclusions from the results.

The present collection of 82 cases includes 20 men and 62 women. In dealing with them, the fact was at once striking that of the 54 cases in which the heredity was stated, 63% showed a heredity for mental disease. In six cases there was also heredity for Graves' disease. In 26 cases, 32% of the total number, there were evidences of a neurotic or psychopathic make-up, and this figure is probably much too low, since in many cases no sufficient data were given to allow one to judge concerning this point. In this same connection is to be noted that 12 cases, 15% of the total number, had had psychoses previous to the onset of any objective symptoms of Graves' disease. Two had had more than one previous attack; in one case a psychosis had preceded the Graves' disease by two years, in one by eighteen years, in one by seventeen years, in two by five years, in one by four years, and in the remaining six the exact time was not given.

The age at onset of the Graves' disease varied from 18 to 63 years, the average being 33.9 years. Likewise the age at onset of the psychoses showed a wide variation, 18 to 66 years, the average being 35.8 years. That is, the psychosis came, on an average, about two years after the Graves' disease.

A more careful examination of the intervals gives some interesting information. In 22 cases the interval was not given. In 32 cases the onset of the Graves' disease and the psychosis was prac-

tically simultaneous. Among the remaining cases a one-year interval was noted in three, a two-year interval in five, a three-year interval in eight, a five-year interval in four, a six-year interval in one, an eight-year interval in two, and a ten-, eleven-, twelve-, thirteen- and twenty-year interval in one case each. That is, in 32 cases, or 52% where the interval was known, the onset of the Graves' disease and the psychosis was practically simultaneous, in the remaining 48% the curve of the intervals rises rather quickly to three years, and then falls again more slowly. This at once suggests the question of whether or not we are dealing with two different kinds of cases. A further analysis shows that 85% of the simultaneous cases had a bad heredity, as against 36% of the cases where the psychosis was later in onset, or from the opposite standpoint, only 15% of the simultaneous cases had a good heredity, while a good heredity was found in 36% of the cases with a later onset of the psychosis. It is also interesting to note that 50% of the simultaneous cases had a bad make-up, while only 26% of the cases with later onset of the psychosis had a bad make-up. Again, 19% of the simultaneous cases had had previous psychoses, while only 11% of the cases with later onset of the psychosis had had previous attacks. In regard to the various symptoms noted in the psychoses of the two classes, i.e., the simultaneous cases and those with later onset of the psychoses, there is not sufficient variation for significance.

If we turn next to a consideration of the more striking symptoms shown in the psychoses of all cases, we find that there was a depression in 53 cases, 65%; excitement in 51 cases, 62%; delusions in 40 cases, 49%; apprehensiveness in 37 cases, 45%; irritability in 33 cases, 40%; exhilaration in 23 cases, 28%; hallucinations in 23 cases, 28%; incoherence in 13 cases, 16%; delirium in 11 cases, 13%; seizures in 8 cases, 10%; memory defect in 7 cases, 9%; paraphasia in 3 cases, 4%; phobia in 3 cases, 4%. (Cf. the table, p [8a].)

A study of the depressions shows that at some stage of the psychoses 23% of them showed exhilaration, and what is more striking, 58% and 59% of them showed, respectively, excitement and apprehensiveness. Such a combination of symptoms, while often seen in cases at the involution period, is rather striking in such a

large percentage of cases whose average age is about 35 years. 51% of the depressions were deluded, which is perhaps of no great significance. 45% of the depressions were notably irritable, perhaps a larger percentage than would be seen in depressions in general.

Of the 23 cases showing exhilaration, 52% at some time in the course of the psychoses were also depressed. This leaves a comparatively small percentage of the whole number, only about 12%, who showed only an exhilaration without a depression. 100% of the 23 exhilarations showed excitement; i. e., if we may be allowed to speak in terms of manic-depressive insanity, we found among the depressions a great tendency to mixed states characterized by depression with motor activity, whereas among the exhilarations we found no tendency to the opposite kind of a mixed state—manic stupor—exhilaration without motor activity. Furthermore, there was a high percentage of irritability, that symptom being present in 61%.

From the standpoint of excitement, of the 51 cases showing this symptom, 61% were depressed, and 45% exhilarated, again emphasizing the large number of mixed states where depression was associated with motor activity. Under this heading we again notice a high percentage of irritability, 51%, as might perhaps be expected. Apprehensiveness occurred in 43%, and delusions in 48%. These figures are mentioned because they occur among the higher percentages, rather than because of any special intrinsic significance.

Considering the 33 cases with irritability, we may briefly note that 79% of them were excited and 66% depressed, again indicating the prominence of these symptoms from another viewpoint.

From the standpoint of apprehensiveness, 86% of the 37 cases showing this symptom were, as might be expected, depressed. 59% were excited, 54% deluded, and under this heading we for the first time find hallucinations rising to a large percentage, viz.; 41%.

Twenty-three cases, 28% of the total number, had hallucinations, mostly of hearing, some of sight, and what is perhaps particularly striking is that 70% of these cases were depressed. Otherwise nothing special stands out under this head.

Forty of the cases had delusions, 68% of these were depressed, 62% excited, 62% apprehensive, 50% irritable. This seems to emphasize the prominence of apprehensive delusions.

The 13 cases showing marked incoherence showed also, as may be expected, a large percentage of excitement and exhilaration, with 62% irritable.

Only 11 cases had a marked delirum, and in this connection only two high percentages are to be noted: 91% were excited, and what is more significant, 82% died, the highest per cent of deaths recorded under any heading.

The number of cases with memory defect, seven, is too small to make an analysis of any value. It is perhaps interesting to note that two were under 30 years of age, one was 32 and had had seizures, one was 43 and had become demented in about six months, one was 48 and was paraphasic; the other two were 43 and 46 years of age, respectively, showing that the memory defect could not be ascribed to senility, and in half of them at least there was slight probability of arteriosclerosis.

Paraphasia was noted in only three cases; all were decidedly irritable. No other characteristic was common to more than one case.

Phobias were also noted in three cases, and they were simply apprehensive and depressed.

Eight cases had had seizures; four were exhilarated and four depressed. 87% were excited. The ages here again indicate that on the whole they were rather young; thus two were under 20, four were under 35, one was 42, and one 66 years of age. Five of these cases died within a comparatively short time, the second highest percentage of deaths noted under any heading.

When it comes to a consideration of the outcome, the great majority of cases passed from observation in an unimproved condition and the further course is unfortunately not known. Four cases improved; they had all been excited and irritable. Three of them had been both exhilarated and depressed. In one case the mood was not mentioned as either exhilarated or depressed, but improvement followed after two years of excitement. In three other cases the exact durations were not given. The ages in these cases which improved were 18, 20, 31, and 35 years.

Ten cases recovered from their psychoses; eight had shown a

depression with excitement, one an exhilaration with excitement, and one an exhilaration followed by a depression with excitement. In two of these recovered cases the Graves' disease and the psychoses had come on practically simultaneously as the result of taking thyroid, and in both cases the physical symptoms had disappeared on the withdrawal of the drug. In the remaining eight cases the mental symptoms disappeared without corresponding disappearance of the physical symptoms. In three cases there was no improvement noted in the physical symptoms, in five cases a partial improvement. The ages of these recovered cases were 23, 24, 27, 30, 37, 43, 53, and in the three remaining cases the age was not given. The hereditary data in these cases indicated little. In three there was a bad heredity, in four a good heredity, and in three the data were wanting.

Only two cases were known to have demented. Both began with apprehensive depressions and one became delirious. The ages were 26 and 43. 25 cases, or 30% of the total number, died under observation, quite a large proportion considering the fact that so many passed from observation in a comparatively short time. 88% of them had been excited, and under the heading of excitement we noted that 43% of the excitements died, the third highest mortality noted under any heading, the highest being, as above noted, 82% of the delirious cases, and the second highest, 75% of the cases with seizures. 52% of the deaths had shown depressions and 32% exhilarations; 36% had been apprehensive, and 24% had had seizures. Among those that died the average duration of the psychosis was thirteen weeks, the median duration was six weeks. Four cases died within a week, four within two weeks, three within a month, six within two months, three within three months, one within a year, and one within two years. In three cases the duration was not known. The ages varied from 18 to 62 years, the average being 35 years. Three were under 20, five under 30, five under 40, seven under 50, one under 60, three under 70. In regard to heredity among the cases described, the figures are too small to be of much account. In ten of the 25 information was wanting; in the remaining 15, ten had a bad heredity and five a good heredity.

Such, then, are some of the most important statistical data gleaned from the analysis. In order that anyone may make use

of the figures for his own deductions, the accompanying table is subjoined.

CORRELATION OF SYMPTOMS IN 82 CASES OF GRAVES' DISEASE.

[Per cent of cases showing the symptoms given in vertical column, also characterized by the symptoms in horizontal column below.]

| | Total number of cases showing— | Per cent of cases showing— | Depression. | Exhilaration. | Excitement. | Irritability. | Apprehensiveness. | Hallucinations. | Delusions. | Incoherence. | Delirium. | Memory defect. | Paraphasia. | Phobia. | Seizures. | Improved. | Recovered. | Demented. | Died. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Depression | 53 | 65 | 100 | 23 | 58 | 40 | 59 | 30 | 51 | 11 | 8 | 8 | 2 | 4 | 8 | 6 | 15 | 4 | 26 |
| Exhilaration | 23 | 28 | 52 | 100 | 100 | 61 | 43 | 30 | 48 | 39 | 17 | 9 | 4 | 0 | 13 | 13 | 13 | 0 | 35 |
| Excitement | 51 | 62 | 61 | 45 | 100 | 51 | 43 | 24 | 48 | 20 | 20 | 6 | 2 | 0 | 14 | 8 | 16 | 2 | 43 |
| Irritability | 33 | 40 | 66 | 42 | 79 | 100 | 39 | 23 | 65 | 26 | 16 | 13 | 6 | 0 | 19 | 13 | 10 | 3 | 33 |
| Apprehensiveness | 37 | 45 | 86 | 27 | 59 | 32 | 100 | 41 | 54 | 11 | 14 | 14 | 3 | 8 | 5 | 5 | 14 | 5 | 24 |
| Hallucinations | 23 | 28 | 70 | 30 | 52 | 30 | 65 | 100 | 70 | 9 | 4 | 9 | 0 | 0 | 9 | 4 | 13 | | 17 |
| Delusions | 40 | 49 | 68 | 27 | 62 | 50 | 52 | 40 | 100 | 17 | 12 | 15 | 2 | 0 | 10 | 5 | 12 | 5 | 37 |
| Incoherence | 13 | 16 | 46 | 69 | 77 | 62 | 31 | 15 | 54 | 100 | 23 | 15 | 8 | 0 | 23 | 15 | 23 | 0 | 23 |
| Delirium | 11 | 13 | 36 | 36 | 91 | 36 | 45 | 9 | 45 | 27 | 100 | 0 | 0 | 0 | 9 | 0 | 0 | 9 | 82 |
| Memory defect | 7 | 9 | 57 | 29 | 43 | 57 | 71 | 29 | 86 | 29 | 0 | 100 | 14 | 0 | 14 | 0 | 0 | 14 | 14 |
| Paraphasia | 3 | 4 | 33 | 33 | 33 | 66 | 33 | 0 | 33 | 33 | 0 | 33 | 100 | 0 | 0 | 0 | 0 | 0 | 33 |
| Phobia | 3 | 4 | 66 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 |
| Seizures | 8 | 10 | 50 | 50 | 87 | 75 | 25 | 25 | 50 | 37 | 12 | 12 | 0 | 0 | 100 | 12 | 0 | 0 | 75 |
| Improved | 4 | 5 | 75 | 75 | 100 | 100 | 50 | 25 | 50 | 50 | 0 | 0 | 0 | 0 | 25 | 100 | 0 | 0 | 0 |
| Recovered | 10 | 12 | 80 | 30 | 80 | 30 | 50 | 30 | 50 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 |
| Demented | 2 | 3 | 100 | 0 | 50 | 50 | 100 | 0 | 100 | 0 | 50 | 50 | 0 | 0 | 0 | 0 | 0 | 100 | 0 |
| Died | 25 | 30 | 52 | 32 | 88 | 44 | 36 | 16 | 60 | 12 | 36 | 4 | 4 | 0 | 24 | 0 | 0 | 0 | 100 |

Examples: Of the 53 cases, 65%, showing depression, 100% of course showed depression; 23% exhilaration; 58% excitement; 40% irritability, etc.

The results are not only difficult of interpretation, but in some instances to a certain extent contradictory, and undoubtedly capable of different interpretations. The following are what seem to the writer to be among the more probable.

As is already noted, there is a heredity for mental disease in 63% of the cases, which is undoubtedly high; even in manic-depressive insanity, where we find the largest hereditary predisposition, according to Kraepelin, it is present in only 80%. Since we are here considering the relation of the psychoses to a physical disease, we can perhaps best compare the hereditary statistics with those of general paralysis, since we have there also a psychosis associated with a definite physical change. The statistics for mental hered-

ity in general paralysis vary greatly according to different men. Kraepelin finds a heredity in about 50% of his cases; Pilcz in only about 18% of his cases, and a fair average may be about 40%. On this basis it seems fair to assume that the mental heredity is strikingly large in our cases. With a mental heredity, then, in 63% of the cases, and a psychopathic or neuropathic make-up in 32 of the cases, together with the fact that 15% of them have previously had a psychosis, it does not seem unreasonable to conclude that we are dealing with individuals in whom a psychosis might have been expected to develop even in the absence of Graves' disease, perhaps without any tangible cause, or at least with only such causes as appear to be of etiological significance in the ordinary functional psychoses. That is, the Graves' disease is only an exciting cause, although perhaps an especially strong one.

At first glance, the fact that in 32 cases the onset of the psychosis was practically simultaneous with the onset of the Graves' disease, might be taken to indicate that etiological relationship was much stronger. It is among these simultaneous cases, however, that we find the highest predisposition to mental disease; 85% of them showing bad heredity, as against 36% of the cases with later onset of the psychosis; and only 15% of the simultaneous cases show a good heredity, as against 36% with good heredity among those with a later onset of the psychosis. Again, it will be remembered that 19% of the simultaneous cases had had previous attacks, as against 11% of the cases with the later onset.

The fact that, among four improved and ten recovered cases, the improvements and recoveries from the psychoses in all but two instances took place without any or only slight improvement in the symptoms of Graves' disease, argues against any fundamental relation between Graves' disease and the psychosis. The two exceptions were cases where thyroid had been taken and where both the physical and mental symptoms disappeared on withdrawal of the drug. The inference to be drawn from these two cases is perhaps somewhat contradictory to the above, and seems to indicate a very definite relation between cause and effect, but after all we are here dealing with an artificially produced condition.

Unfortunately the statistics of any considerable number of cases are not at my command concerning the proportion of cases with

Graves' disease which never develop a psychosis. It seems very probable that many cases, at least, go for years without psychoses, and even among the cases here considered the interval was in several instances from ten to twenty years. Syllaba, in a paper on the prognosis in Graves' disease, while not considering the psychiatric side to any extent, yet notes in a general way improvement and recovery in 62% of 50 cases which he followed throughout their lifetime.

In view of the facts already presented it would seem that in a majority of cases where a psychosis does develop, the time of origin of the psychosis after the onset of the Graves' disease is somewhat proportional to the predisposition of the individual to insanity, the most susceptible losing their mental balance at once. We must, of course, acknowledge that the strength and quantity of toxines, if such be present, may vary in different cases and have its own significance. Objectively, however, the physical and mental symptoms are not always proportional.

Finally, we must consider the possibility of common etiology for both physical and mental symptoms. Until we know more about the etiology of Graves' disease and the etiology of abnormal mental conditions, this question can hardly be settled. In many cases the course of the physical and mental symptoms is sufficiently independent to make it at least questionable.

Before leaving the etiological considerations attention may be called to the fact that among general medical men there is a tendency to consider mental grief and worry as a possible etiological factor in Graves' disease. In the cases here considered, for the most part no such condition preceded the Graves' disease, but accompanied or followed it.

If we turn next to a consideration of the mental picture in the psychoses associated with Graves' disease, we find a predominance of certain symptoms, depression, apprehensiveness, irritability, and excitement, characteristics which are usually found to a lesser degree in the sane with Graves' disease. On the whole we find that the mental pictures may vary greatly; there were many cases essentially depressions, some essentially exhilarations and vice versa, others showed in their course depressions followed by exhilarations, and still others were essentially delusional conditions. There were some cases of acute delirium; practically as much variation as is

found in the functional psychoses not associated with Graves' disease. It is interesting to note that only two cases demented, and that on the whole the course of the psychoses, apart from the prominence of hallucinations, does not resemble that of dementia præcox. In one of my own cases, however, which has had three acute attacks with perfect recovery, so as to resume her work as a school-teacher in the intervals, the mental picture was strikingly dementia præcox like. Not only were hallucinations prominent, but the mood was more or less apathetic, autochthonous ideas and ideas of reference were prominent to a marked degree, and there were many impulsive acts, and other phenomena of disintegration of the personality. The course alone was not typical, and now after about ten years the patient is in no way demented. A large number of the cases were depressed and a greater part of the depressions showed a motor activity instead of a retardation. Apprehensiveness and irritability were unusually frequent, and hallucinations were much more common than is usual in depressions. The prominence of this latter symptom suggests the possibility of strong toxic influences.

With regard to the outcome, while some cases improved and more recovered, on the whole the prognosis of the mental symptoms associated with Graves' disease seems to be more serious. In many instances the Graves' disease seems to furnish enough to produce at least chronicity, although few dementias. The rapidity with which death followed the onset in many cases was quite striking. In these cases delirium and excitement were conspicuous and the death rate much larger than in the ordinary manic excitements, even of similar severity, and it seemed much more difficult to cope with the exhaustion. It would for this reason seem probable that in addition to the exhaustion from the excitement there is some direct toxic influence from the Graves' disease which is of considerable prognostic significance.

I would conclude briefly that in many cases Graves' disease is rather an exciting than a fundamental cause of the psychosis, and that the psychoses themselves are not essentially different from the ordinary recognized functional psychoses, except as modified by the prominence of those symptoms seen to a lesser degree in the sane with Graves' disease. The prognosis is on the whole much more grave and is especially bad in the delirious cases.

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## DISCUSSION.

Dr. Packard.—In my paper I have not attempted to take up the matter of treatment and personally I have never had any experience with the use of hydrobromate of quinine. From a standpoint of treatment I might mention two rather interesting cases, one a woman who had had two previous attacks of exhilaration which were absolutely typical manic-depressive attacks, from each of which she recovered without any special change being noted in the symptoms of the Graves' disease. Following the second attack a portion of the thyroid was taken out; she was better physically and seemed to be getting along much better in all ways, so much so that her people were quite hopeful that she would not have another mental upset. However, two years later she had another very typical maniacal excitement from which she again recovered, and I believe at the present time she is in another excitement. This case would tend to show the independence of mental disease and Graves' disease. In another case we used serum prepared by Dr. Beebe of the Loomis Laboratory in New York. Under this treatment the Graves' disease improved but little. The tachycardia was perhaps a little less marked, the prominence of the eyes was perhaps slightly less, but the result was not as encouraging as in some of the cases reported by Dr. Beebe. The mental condition did improve in time, however, and the patient was later able to resume her work. At the present time she is again in the hospital with another similar attack. It may also be mentioned that before coming to McLean she had had a mental upset from which she recovered without any special treatment for Graves' disease.

# HYSTERIA, WHAT IT IS AND WHAT IT IS NOT.

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Hysteria, a favored topic with medical writers since the time of the father of medicine, has again come to the front under the stimulating influence of Babinski, who has attracted the attention of the neurological world to this old subject, as Marie, a few years since, revived interest in aphasia. In the case both of aphasia and hysteria, views regarded as classical if not irrefragable have been attacked with skill and audacity. The profession of medicine owes much both to Marie and to Babinski, even if it is not prepared to give universal acquiescence to their views. Much that Babinski[1] has advanced should be received without demur. One thing of great value which has come out of his studies and writings has been the more exact delimitation of the definition of hysteria, even if the bounds set by him are not accepted in their entirety. He has done for hysteria what our distinguished American colleague, Dr. Dana, has accomplished for another nervous disorder so often discussed with hysteria and not infrequently combined with it in a clinical case, in his paper on "The Partial Passing of Neurasthenia." It might be said

[1] Ma Conception de l'Hystérie et de l'Hypnotisme (Pithiatisme). Conference faite à la Société de l'Internat des Hopitaux de Paris, June 28, 1906.

Émotion, Suggestion et Hystérie. Extraits des comptes rendus de la Société de Neurologie de Paris, July 4, 1907.

Instabilité Hystérique (pithiatique) des membres et du tronc. Extraits des comptes rendus de la Société de Neurologie de Paris, March 5, 1908.

Démembrement de l'Hystérie Traditionnelle, Pithiatisme, 1909.

also that Dana,[2] after the fashion of Babinski, and almost contemporaneously with the latter's first general presentation of his conception, has set limits to hysteria which are not very different from those of Babinski, although expressed in somewhat different terms.

The tendency in the past has been to regard too many clinical phenomena as hysterical—to assign to hysteria every sort of nervous affection for which no other abiding place could be found. In a few respects Babinski has perhaps narrowed too much the conception of hysteria.

The definition of hysteria has been often essayed. Reference to a few of these definitions might here be made. In doing this I shall refrain from recalling any of my own efforts in this direction, as these with more experience have become more or less unsatisfactory. Starr, in his recently published work on "Nervous Diseases, Organic and Functional" (second edition, 1907), speaks of it as "a functional nervous condition characterized by a permanent mental state, which may be termed the hysterical temperament, and by sudden temporary attacks, of mental or emotional or physical kind." A definition like this, although necessarily imperfect, answers well enough for general descriptive purposes. The inclusion by Starr of the hysterical temperament as a permanent condition is important, as indicating that always underlying hysterical phenomena is a constitutional predisposition.

Dana, in his article on "The Limitation of the Term Hysteria," in his usual terse and thoughtful manner, has given a definition which appeals to those who have dealt practically with the disease when he says that hysteria "is a morbid mental condition in which ideas or emotional states seriously and unwittingly control the body and produce more or less permanent and objective morbid states." In this definition he introduces an etiological factor largely disregarded by Babinski, and insists with correctness on the possible greater or less permanence of the phenomena of the disease, in this respect also differing somewhat from the French neurologist.

[2] "The Partial Passing of Neurasthenia." Boston Medical and Surgical Journal, March 31, 1904.

"The Limitation of the Term Hysteria, with a Consideration of the Nature of Hysteria and Certain Allied Psychoses." Journal of Abnormal Psychology, February, 1907.

The etiological and therapeutic definition of Babinski is that now most attracting attention, but this, like all others, is far from being completely satisfactory. While it is impossible to state what the transient anatomical substrata of hysterical phenomena are, in every definition which deals with the supposed nature of hysteria, some consideration must be given to this matter, as well as to the question of inherited tendency. An affection which presents such definite symptoms and signs as those which are recognized universally as hysterical must have beneath it a change of some sort in the nervous system, even though this is of a more or less transitory character. The disease is functional in the sense that this change is not necessarily permanent, and healthy conditions can often, but by no means always, be readily restored; but disease it is, whatever its nature and however short or long its duration. What the change in the nervous system is, the most extensive observation and investigation have not enabled us to learn, but the same may be said of other so-called mental and nervous disorders which are everywhere appreciated as real diseases—of melancholia, mania, the neuralgias and chorea, for instance. The speculations advanced like those of cortical vasomotor spasm, of toxemia, and of neuronal disseverance, are all open to the objection that they cannot be proved and are not on the basis of analogy truly explanatory of the phenomena.

Objections of another sort may be urged to the psychological definitions which discuss hysteria as a dissociation or disintegration of personality. This it probably is, but not much help is given to the student or the practitioner by such a definition unaccompanied by a consideration of both predisposing and exciting etiology, and of its generally recognized clinical phenomena. The disease is genuine, not simply imaginary or factitious, even if the conditions underlying it are not demonstrable by any known methods.

A partial error in the definitions of both Dana and Babinski is that sufficient emphasis is not laid upon the abortive or imperfectly developed forms of hysteria. These constitute a considerable percentage of the cases which should be really regarded as instances of hysteria, and no more reason exists for not recognizing them than for not believing in the abortive forms of other well-known diseases as, for instance, the *formes frustes* of ex-

ophthalmic goiter. These cases of hysteria in which hypesthesia, sometimes of light grade, moderate or slight impairment of motor power, choreiform movements, tremor, and other well-known phenomena are present, are as truly instances of the disease, although of less severity, than those observed in the rare disease described by Dana, in which gravely marked and more permanent symptoms and signs can be demonstrated. The same constitution or temperament usually underlies them, and they present the same or similar stigmata, these differing only in their intensity. That they are amenable to treatment is not an argument against their genuineness.

The main advantage of Babinski's definition that hysteria is a nervous disorder induced by suggestion and cured by persuasion, is that it concentrates attention upon what the framer of the definition believes are its great causative and curative agencies. It leaves the fundamental nature of the disorder unexplained, while presuming, of course, its psychic pathology.

Babinski includes in his list of hysterical stigmata, that is, in his series of phenomena which are capable of being produced by pure suggestion and cured by persuasion, "convulsive attacks; somnambulism; delirium; paralysis; divers contractures; tremors; cloreiform movements, usually rhythmical; disturbances of phonation and respiration; disorders of sensibility shown in anesthesia and hyperesthesia; sensorial anomalies; and disturbances of the bladder."

Speaking of what should be excluded from the hysterical syndrome, he tells us, "Suggestion cannot abolish or exaggerate tendon reflexes or cause disturbance of the pupillary reflexes or the cutaneous reflexes; at most, suggestion can only render examination of these phenomena difficult, or place obstacles in the way which might mislead a novice, but which an experienced neurologist would overcome; suggestion cannot induce vasomotor, secretory or trophic disorders, and it cannot alone induce hemorrhage, anuria, albuminuria or fever."

Let us turn aside for a moment to say a word about terminology. All things considered, it is better to retain the word hysteria unless some term unequivocally expressive can be substituted, and even Babinski has failed in this respect. In order to enforce his views he has coined the new term pithiatism and its derivative

pithiatic from Greek words meaning "persuasion" and "curable." As he recognized, this new term refers to only one, although an important, feature of his definition. It does not indicate the idea of suggestion as a cause, although he regards suggestion as one of two factors of his definition. An earlier recommendation than that of Babinski, of a term to describe hysterical and hypnotic phenomena, was suggignoskism or suggestionism, but this term is as objectionable as pithiatism, and for a somewhat similar reason, namely, that it is not sufficiently descriptive.

Is it altogether philosophical to describe a disease by a term which is supposed to indicate the method of successfully treating it? Objections might be offered to this therapeutic-test method in terminology as in diagnosis. Quinine in malaria, mercury in syphilis are remedial or curative agencies. Should one, therefore, define these diseases, not as affections with special pathogenesis and well-known clinical phenomena, but in terms which indicate that they yield to certain medicinal remedies? No one but Babinski and his immediate following will dispute that hysterical affections will not always yield to methods of persuasion or education, unless these are supplemented by other measures calculated to improve the general nutrition of the patient and to counterbalance inherited predisposition. What neurologist of large experience has not seen, especially in his private work, cases of grave hysteria which have resisted all suggestive and persuasive efforts until measures of a physical character have been used? It is true it has been said that the so-called rest treatment, with its seclusion, massage and electricity, is only a special method of applying suggestion and persuasion. Abundant experience, however, shows that massage and electricity, and other physical measures, do much more than merely stimulate the hope and imagination of the patient. They improve nutrition by aiding digestion, assimilation and elimination. That they improve the quality of the blood has been shown by actual investigation. In many cases of hysteria and hysteroneurasthenia, and especially the latter, the physical measures employed play a large part, and sometimes a part which is little if at all inferior to the psychotherapy exerted through the personality of the physician. Both the psychic and physical methods have their appropriate places and proportions in the treatment of hysteria.

The differentiation of hysteria from organic disease is to be chiefly made in the first place by the presence of certain phenomena which are pathognomonic of the latter. It has often been said that hysteria may counterfeit almost any form of organic disease, but this is not a correct way of putting the matter. It should be rather said that hysteria may more or less imperfectly counterfeit many forms of organic disease of the nervous system. With regard to these affections about which difference of opinion is most likely to arise, usually the presence or absence of certain well-known symptoms or signs, among which are those which Babinski insists are not present in true hysteria, will be sufficient to settle the diagnosis.

This would appear at first sight to be merely saying that organic disease is to be distinguished by organic symptoms, and hysteria by those which do not belong in this category. The difficulty is that too often the mind of the diagnostician has been in doubt as to what are the intrinsic characteristics of these differing affections.

The most reliance in the differentiation of hysteria from organic disease is to be placed upon a study of the reflexes, and of the manner in which the symptom picture of hysteria usually is exhibited. With regard to the deep reflexes, such phenomena as foot clonus and the Babinski sign—extension of the toes and especially the great toe upon plantar stimulation—are the most important. I have long taught that persistent foot clonus is almost invariably indicative of the existence of organic disease, and especially of disease of the pyramidal system.

In the discussion of a case of hemiplegia with contractures and tremor in the paralytic limbs, presented at the meeting of the Philadelphia Neurological Society, February 22, 1897, the importance of persistent foot clonus was insisted upon as a sign of organic disease. Such clonus was present in this patient and was sufficient, with the full consideration of the other phenomena exhibited, to exclude the case from the hysterical category.[8] Reference was made in this discussion to other cases in which ankle clonus of the persistent type enforced the diagnosis of organic disease, and attention was called to the fact that in some of these cases hysterical epiphenomena were present.

[8] Journal of Nervous and Mental Disease, July, 1897, Vol. XXIV, No. 7.

That an abortive or pseudoclonus may be present in hysterical and hysteroneurasthenic cases must be admitted. Gowers has described this as a spurious clonus, and believes that it is due to a half voluntary contraction of the calf muscles. Although this is occasionally seen, it is much more frequently absent than present, and certainly is not to be referred to the same causation as the persistent clonus of organic disorders.

With regard to the Babinski reflex, I find myself fully in accord with the discoverer of this sign, and this in spite of the recent conversion of Van Gehuchten,[4] on the basis of an exceptional case, to the side of those who believe that in rare instances both the Babinski response and foot clonus may be present in grave hysteria.

Owing to the high position of Van Gehuchten it would seem worth while to refer to the paper in which he records his change of mind. After an interesting general discussion of the physiological and pathological reflexes, tendinous and cutaneous, Van Gehuchten says that he held to the same view as Babinski until he became doubtful of its validity by observing a case in which, after having made the diagnosis of organic disease because of the presence of these signs, he was led to change his diagnosis and his opinion because of their disappearance in a few days.

He formulates as his final judgment that exaggeration of the tendon reflexes, even going as far as foot clonus, while characteristic of a lesion of the corticospinal fibers, *may* nevertheless be exceptionally met with in hysterical paralysis, and that the Babinski sign is not *always* pathognomonic of a lesion of these fibers, in that the typical extension of the great toe may be observed, however exceptionally, in hysteria. In order to explain his single exceptional case, he reasons that functional disruption or temporary disablement of the corticospinal system of fibers may be sufficient to account for the presence of the clonus and the Babinski sign. He recalls cases observed by him and others in which the Babinski sign was present, and in which no degeneration or irritation of the pyramidal bundles existed or could have existed, cases, for example, of tumor of the brain outside of the motor

[4] Van Gehuchten, A. Le Nevraxe Recueil de nevrologie normale et pathologique, Vol. VIII, Louvain, Uystpruyst., 1906.

system, and of intraspinal tumors compressing the cord and not giving rise to pyramidal degeneration.

In spite of this unusual case and the more or less cogent reasoning of Van Gehuchten, my personal experience has been altogether in favor of the position of Babinski. I do not recall a single instance in which the Babinski sign and persistent foot clonus or either were present, and the case demonstrably not one of organic disease. In making the statement it must be remembered that toxemias, and alterations such as are sometimes found in syphilitic disease, may give rise to temporary disablement of the corticospinal system, but these should be ranked among organic cases.

In some of the cases of tumor in both brain and spinal cord in regions somewhat removed from the pyramidal tract, in which the signs under consideration are present, these may be explained by the pressure exerted by the lesions on this tract.

It is not true that both the deep and the cutaneous reflexes are never disturbed in hysteria. In hysterical cases, especially in those in which anesthesia or hypesthesia is a unilateral sensory phenomenon, a difference is not infrequently shown between the knee jerks of the two sides. Usually, but not always, the kick on the side in which sensation is retained is more marked than on the other side. I agree with Knapp,[5] who in a paper recently read before the American Neurological Association, held that there is often a difference both in the cutaneous and deep reflexes on the two sides in hysterical hemianesthesia and hysterical hemiplegia.

It is a matter of the commonest observation that the plantar flexion cannot be obtained, or only in very slight degree, in cases of anesthesia which involve the foot or feet. Here it may be said that the reflex response is conditioned by the impairment of sensibility; nevertheless this is hysterical, and not until it has disappeared does the normal response return. In not a few cases of typical hysteria without impairment of sensation in the lower extremities plantar flexion is unduly active.

With regard to disturbances of the pupillary reflexes, it must be noted that excellent observers have put on record cases of

[5] Knapp, P. C. Proceedings of the American Neurological Association meeting, held in New York, May 27, 28 and 29, 1909.

iridoplegia as hysterical in origin. These are probably instances of faulty observation or faulty interpretation. It is probable that a toxemia or a transitory lesion like that which is sometimes present in nervous syphilis may be the true explanation. A degree of anesthesia also may play some part in producing a pseudo-iridoplegia, but this is a false and not a true paralytic disturbance.

One of the methods of distinguishing an hysterical from an organic paralysis which is worthy of attention and favorable comment is that of Hoover.[6] This observer studied a normal individual recumbent in the dorsal position, and found that whenever one leg was voluntarily raised from the couch the heel of the other exerted complementary opposition by being dug or pressed into the couch. Similarly, in the case of an organic hemiplegia or hemiparesis, when the sound leg is raised the affected leg, in proportion to the power which remains in the member, exerts a similar complementary opposition. In the case of either pure malingering or an hysterical hemiplegia or paraparesis, this complementary opposition does not take place unless indeed the person investigated, being familiar with what is expected of him, executes the test through the exercise of his will. It is easy, however, according to Hoover, in most cases to determine the presence of this sign.

My experience with Hoover's test has been limited but confirmatory of its value. In the hysterical hemiplegic or hemiparetic the affected limb remains passive throughout the test.

For generations most writers on the subject of hysteria have given a place of first importance to emotion in the etiology of hysterical attacks. Illustrations of this statement could, of course, be adduced in large number, but to take only two from recent works of high rank, Dana, in his "Text-Book of Nervous Diseases and Psychiatry," says that "The most important single exciting factor is powerful emotion, particularly fear," and Starr, in his "Nervous Diseases, Organic and Functional," speaks of mental or emotional shock as the chief exciting cause. Many cases have been put on record of the sudden or rapid production of hysterical phenomena or attacks through or apparently through

[6] Hoover, C. F. A New Sign for the Detection of Malingering and Functional Paresis of the Lower Extremities. Journal of the American Medical Association, August 20, 1908.

the influence of sudden emotions—cases of paralysis of one or more limbs, of anesthesia variously distributed, of severe and prolonged convulsive attacks, of delirium, aphonia and visceral disturbances, all recognized as of hysterical character.

Babinski, in order that his iron-clad definition may not be impaired, finds it necessary to exclude emotion from the causes of hysteria, but to do this entirely is not easy, and it is here, as in some other matters, that his views of the subject show something less than impregnability. He is confronted, for instance, with the necessity of explaining away such a time-honored illustration of the power of emotion over hysterical symptoms and conditions as the sudden cure of hysterical paralysis by the fear of fire which unexpectedly threatens the life of the patient. "Let us," he says, "take another example, that of a woman afflicted with paralysis or with hemiplegia rebellious to all attempts at psychotherapy, who, seeing that the house is on fire, jumps out of bed, runs out, and thus is restored suddenly to health. In this case emotion indeed seems to be the cause of the cure, but on reflection this conclusion becomes a matter for discussion. It must not be forgotten that it is usual to say to such patients that they will one day get well suddenly under the influence of joy, terror or some other moral shock; and it may be presumed that such a prediction coming to mind at the moment of the conflagration exercised a psychotherapeutic influence."

It must strike everyone that an explanation such as this lacks somewhat in force or in ingenuousness. The simplest explanation which appeals to everyone is that it is the sudden and tremendous influence of the emotion of fear which produces the result. It is hardly necessary to invoke the theory that suggestions previously given act as the therapeutic agent. If suggestion plays any part, it is most likely that it is the suggestion of death or great bodily harm, which is suddenly called into being by fear.

Only one additional word need be said in this connection. An emotion capable of thus curing an hysterical paralysis would certainly be capable of producing it.

The hysterical nature of some vasomotor and secretory affections had up to the time of Babinski generally been accepted, and this chiefly because of their frequent association with other gen-

erally recognized hysterical phenomena such, for instance, as those enumerated by Babinski and by Dana. That these affections, among which may be enumerated blushing and pallor, abnormal perspiration and disorders of the alimentary canal, may be produced or exaggerated by suggestion, probably no one will deny. Babinski, however, and correctly in accordance with his dictum, asserts that they are not influenced, or at least not as much influenced, by persuasion as those phenomena which he regards as evidences of genuine hysteria, and therefore are not truly pithiatic. Of course, if it is admitted that only well-marked pithiatic symptoms are hysterical these conclusions must be accepted, but it is somewhat doubtful whether absolute acquiescence should be given to this view of the matter. Admitting the influence of emotion in the etiology of hysteria, no good reason would seem to exist for not including some vasomotor and secretory affections as phenomena, or at least epiphenomena of hysteria. Psychic influence plays a major part in their production and, as has been shown in some experiments upon animals and upon human beings, a like influence upon their disappearance or upon their non-appearance. It is not within the scope of this article to go into the question of the influence of emotional states on the alimentary canal and on vasomotor and secretory phenomena in general, but many observations, recent and remote, have shown the great importance of this influence, and have also shown that morbid phenomena, alimentary, cutaneous and visceral, are frequently observed among the hysterical. The problem may perhaps best be left as at present, not fully solved.

At the meeting of the Paris Neurological Society, held July 4, 1907, in reply to Ballet's query as to how he (Babinski) would explain the fact that the most characteristic manifestation of hysteria, the attack, is generally provoked by an emotion, Babinski spoke as follows:[7]

Even admitting that apparently spontaneous hysterical attacks are always the result of emotion, it is no less true that attacks of this kind may be experimentally reproduced, and the form, intensity and duration may be varied at will; they are thus accidents capable of being provoked by suggestion, and, in consequence, should be ranged with hysteria, in

[7] Loc. cit.

accordance with the definition which I have given of this nervous condition.

"Further, I think that the rôle of emotion in the genesis of hysterical crises has been exaggerated. Doubtless emotion alone may give rise to such trouble as the constriction of the throat, and the intellectual confusion, more or less pronounced, that is described as belonging to the hysterical attack; but are these not rather physiological reactions which any individual may present?

As far as concerns the most characteristic symptoms of the attack, the opisthotonos, the passional attitudes, etc., there is room to believe that these are less the consequence of emotion than of suggestion, or of imitation, which is a form of suggestion.

It appears to me also quite admissible that in certain cases the emotion, producing a psychic disturbance which diminishes the faculty of control, augments the suggestibility and constitutes a condition favorable to the display of the hysterical manifestations. These are, however, questions which we may discuss forever, for they lead to no definite solution.

But it is incontestable that so-called primary hysterical accidents, particularly the hysterical attacks, whatever be the part belonging to emotion in their genesis, may be reproduced rigorously by suggestion, and they are thus to be distinguished from the emotive pilomotor and vasomotor disturbances upon which I have addressed the society."

Is there not much begging of the question in this reply and explanation of Babinski? Would it not be better to frankly admit the real rôle of emotion in the causation of hysteria than to make the part which it plays indirect in order to escape from a difficult position? Whether emotion acts by direct or indirect suggestion, or in some other way, it plays a part usually in association with other causes, as physical injury, in the production of hysteria, especially of the grave type. To make emotion, however, the most frequent exciting cause of hysteria is as serious a mistake as to exclude it altogether.

It may be worth while, after discussing this question of the rôle of emotion in causation, to cite the views of Oppenheim as to emotional phenomena in the clinical history of hysteria from the last edition of his Lehrbuch der Nervenkrankheiten.[8]

"From all this we may conclude: The foundation of hysteria is an abnormal mental state. The anomalies concern in the first place the affective sphere. There exists a disparity between the intensity of the stimulus and the strength of the emotional reaction, mostly in the sense that the

[8] Oppenheim, H. Lehrbuch der Nervenkrankheiten, Ed. 5, 1908, Vol. I, pp. 1202-1204.

emotional excitability is exaggerated, and the stimulus-threshhold is depressed. To this is due the inconsequence, the incalculable character of the reaction, by which one and the same stimulus may leave the emotional sphere completely uninfluenced, or may set free powerful as well as qualitatively varying emotional states and emotional discharges. Disturbances also are noticeable in regard to the duration and stability of emotional excitation. On one occasion a feeling of dislike, awakened through practically one impression of an idea, may last an abnormally long time, and produce a mood which is morbid in its persistence; on another occasion the emotional process may be manifested with great inconstancy through abrupt, apparently unmotived oscillations. The 'hysterical capriciousness' (moral ataxia, Huchard) is certainly not a constant symptom, or one occurring in all cases, but in the majority of cases it is clearly marked. Doubtless also a pathological diminution of the emotional reaction ('emotional torpor') may exist, especially in certain cases of suffering."

To the members of this association the relation of hysteria to insanity is a topic of special interest. While no trained neurologist or alienist will make the mistake of confounding the well-known forms of insanity, such as melancholia, paranoia and general paresis with hysteria, even these affections in their lighter forms or earlier stages are occasionally set down as hysterical by the general physician. This is particularly true of hypochondriacal melancholia, neurasthenia sharing with hysteria in the confusion of diagnosis exhibited by the physician. It is, however, more especially from the group of mental phenomena which Janet has marshalled under the term psychasthenia that it is necessary to clearly differentiate hysteria.

This differentiation is really easy if one's conception of hysteria on the one hand and of psychasthenia on the other is perfectly clear. It need not, however, be a matter causing stupefaction, as Babinski suggests regarding a colleague, if some cases of the two affections seem to have analogies. The hysteric, although not frequently, may show obsessions of doubt or fear or other typical manifestations of psychasthenia, and the psychasthenic may, in rare cases, present genuine hysterical stigmata. Having in mind these rare occurrences the diagnosis of one of these now well-defined affections from the other is no longer, thanks to Janet, Babinski, Prince, Donley and many others, a task requiring unusual powers; nevertheless Babinski lays perhaps too much stress upon the values of his etiologico-therapeutic definition of hysteria in connection with the separation of these disorders. Certainly

persuasion, in the sense of proper educational measures, plays an important part in the extremely rare cases in which the cure or great improvement of psychasthenia is possible. The most important point in the differentiation is the absence in pure psychasthenics of the recognized stigmata of hysteria. While, as indicated above, these may be associated symptoms or epiphenomena, on the whole the association or the superimposition is infrequent.

With regard to hysteria and neurasthenia the difficulties of diagnosis arise only in those cases which are poorly studied or in which the genuine symptoms of both affections are commingled. A tendency is shown by some to speak of a case as either neurasthenic or hysterical without due consideration. The symptomatology of neurasthenia is far more complex than that of pure hysteria, but the one condition which dominates the entire symptomatology is that which shows the existence of exhaustion of nerve cells. In this way only are to be explained the fatigue on moderate or slight exertion, mental or physical, the more or less isolated or the widely distributed paresthesia, the exaggerated reflexes, the sexual and vesical weakness, the epigastric pulsation, and the numerous other well-known symptoms of neurasthenia, varying according to the so-called types—cerebral, spinal, cerebrospinal, lithemic, sexual, angiopathic, etc.

Mettler,[9] who has written a valuable article contrasting hysteria and neurasthenia, lays much stress on the psychic origin of the former and the histophysiological basis of the latter. It is quite true that in neurasthenia the evidences of cellular change are more apparent than in hysteria, but in the latter one cannot doubt that some change, probably histophysiological, occurs as well as in neurasthenia. In grave cases of hysteria with pronounced anesthesia, motor paralysis and other striking symptoms, this view is not so likely to be called in question, but it is equally correct when applied to milder cases with hypesthesia and light grades of paresis.

The point is not that histophysiological changes or deficiencies are not present in hysteria, but these are not demonstrable as in neurasthenia, and are more under the control of the will than are

[9] Mettler, L. Harrison. Hysteria and Neurasthenia: Their Nature and Treatment Contrasted. The Illinois Medical Journal, December, 1907.

neurasthenic phenomena. Even in neurasthenia the will plays no unimportant part, both in the causation of symptoms and as an auxiliary in their relief or cure. I would not, however, have it understood that the part played in the one is at all comparable to that in the other.

As has often been repeated, the diagnosis of hysteria from neurasthenia, as from other nervous and mental disorders, is to be made in the first place by the presence in the former of the universally recognized stigmata or landmarks of the disease. These are not present in neurasthenia in which paresthesias take the place of anesthesias, fatigability of paresis, lack of mental concentration of self-absorption, alterations in power of alterations in character, and so on through a list of well-known differences, such as have been indicated by Mettler.

Dana, in his "Partial Passing of Neurasthenia," has given to the profession the best methods of separating this disorder not only from hysteria, but from such mental affections as psychasthenia, hypochondria and melancholia. He has indeed shown that so-called neurasthenia is in many instances only a sort of understudy of some type of insanity, or the threatening stage of some psychosis, which the patient, under wise management, in some instances escapes.

As Babinski and indeed many others have emphasized, when attempting the differentiation of hysteria from neurasthenia, as from organic diseases and from insanities, the somewhat frequent combination of hysteria with these disorders, mental and bodily, must always be kept in mind. That part of the combination which disappears under the influence of persuasion, Babinski would have us understand, is always the part, and the only part, which can be properly classed as hysterical.

In connection with the discussion of hysteria the subject of simulation is one of the utmost importance. In approaching this subject one must have first clearly in his mind the fact that hysteria is not simulation and simulation not hysteria. Hysteria is a functional nervous disease with certain definite phenomena usually classed as stigmata. Good authorities may differ as to the number and character of these manifestations, but all are agreed as to some of them. The subject is clouded by the fact that while hysteria and simulation are not interchangeable terms,

the hysteric may, under certain incitements, exaggerate or even simulate. The same temperament which gives rise to true hysteria under sufficient exciting causes seems sometimes to induce feigning. A great difficulty then arises—that of separating the fraud or malingering from the genuine phenomena of a disease—whatever the immediate cause and the nature of this disease may be. Wrong may be done by the lack of careful consideration in such cases.

A desire for sympathy is well known to be present in genuinely hysterical persons, and this fact has been observed by many, and as has been stated by a recent writer, leads to "self-inflicted wounds with consequent sores that will not heal, the vomiting of blood sucked from a tooth and swallowed, and high temperature obtained by friction on the thermometer either in the mouth or rectum, emaciation from supposed starvation and vomiting of all food." (Starr.) To these might be added other manufactured symptoms.

While the existence of such factitious phenomena should put the investigator on his guard, it should not, as some would have us believe, always induce him to regard the whole case as one of fraud. In some instances it is confirmatory rather than antagonistic to the view that the case is fundamentally one of true hysteria. When hysterical convulsions, anesthesias of the classical hysterical type, aphonias, contractures, paralyses, contractions or reversals in the visual field are present in a given case, the existence of affections and conditions which may be assigned to feigning cannot shut out the basic diagnosis of hysteria. Nevertheless cases of pure fraud or malingering should not be classified as hysterical.

Some of the older writers, and careless observers and writers in all periods, have classed as hysterical phenomena clearly due to pure fraud, to insanity or to mistake.

It is scarcely necessary to call attention as instances of pure fraud to cases in which urine or blood is said to have been discharged from parts like the ears, the eyes, the breasts or the navel; to cases in which dismembered spiders or frogs, dead or alive, have been ejected or removed from various bodily receptacles; to cases of ulcerations, eruptions and hemorrhages, so evidently factitious as to need no discussion. Among the examples of

fraud which have been reported as instances of hysterical phenomena are some of the extraordinary cases of anuria and ischuria —those which have been recorded as not having passed urine for one or two months, repeated catheterizations revealing an empty bladder. False pregnancy, sometimes considered in connection with phantom tumors, and spoken of as an hysterical phenomenon, is due rather to mistake, fraud or melancholiac obsessions or delusions. Hemorrhages from the stomach, bladder and vagina, while they may occur in the hysterical, are either produced by the patient or are due to causes independent of the hysteria—to bodily injuries, for instance, such as are received in serious accidents. Fever, or rather unusually high temperature, reaching sometimes as high as 110° or 112° F., and reported as hysterical, is also fraudulent, although in a few instances high authorities have reported such cases as genuine. Other examples of simulated, or rather factitious, symptoms regarded as hysterical are dilated or contracted pupils produced by the use of a mydriatic or a myotic.

Recognizing that simulation and hysteria are not identical or interchangeable, the next question is, how is the distinction to be made between hysterical and simulated phenomena? This query is not so easy to answer, as it may at first sight appear. It is easy enough to recognize, as fraudulent and not hysterical, symptoms or conditions which common sense indicates as impossible of occurrence except through fraud. It is when we come to some of the more usual phenomena of hysteria that the greatest difficulties arise—those phenomena for instance which Babinski unhesitatingly places within the hysterical class—convulsions, anesthesias, etc.

Babinski and others following him lay much stress upon the view that all pithiatic, that is hysterical, phenomena can be *exactly* simulated, and in their writings even convey the idea that this simulation is comparatively easy. This way of looking at the matter should not be accepted too readily. To simulate with great precision the serious phenomena which form the hysterical syndrome in some cases is more or less difficult. Every examiner again and again has seen a patient suffering from hysterical anesthesia evidence this by wincing or by speech at the crossing of the median line, and this without suggestion. Even if more or

less suggestion is exercised in such an examination the exactness with which the change in the appreciation of sensations takes place in the crossing is beyond the power of simulation. The same might be said about contractions and reversions of the visual field.

Babinski would have us believe that moral considerations above all else should govern us in our diagnosis.

It is true that the incentive to fraud, as in litigation cases, must always be borne in mind, but I would rather say that the separation of hysteria from simulation in cases in which genuine hysterical phenomena are apparently present, is to be made by a consideration of the manner in which the patient does or does not present a symptom picture which, however readily simulated in some of its details, is almost impossible of such simulation in its entirety.

It is much the same with hysteria as with insanity; simulated insanity is almost universally recognized as rare by competent observers and writers, that is the simulation of insanity by one not insane. The form of insanity most frequently simulated is that of comparatively simple type, like mania or dementia, and even here it is difficult to thoroughly carry out the feigning. In those forms of insanity which present a more or less complex or elaborate train or system of phenomena, in the typical forms of paranoia for instance, with delusions of persecution or of self-exaltation, the phenomena being peculiarly grouped, simulation is impossible except to one who has intelligence or training and has closely observed the phenomena of the type the feigning of which is attempted. In grave hysteria likewise, where as a rule, although not without exception, the syndrome is made up of a collection or combination of sensory, motor, visceral and psychic phenomena, simulation is almost equally difficult. It is the inexactitude and incompleteness of the reproduction of the phenomena which should most claim the attention of the diagnostician.

In connection with the discussion of the nature and diagnosis of hysteria, the so-called traumatic neuroses necessarily come into prominence. Usually these are regarded as functional nervous disorders in which the elements of hysteria and of neurasthenia, separate or combined, are present. For the purpose of this discussion neurasthenia may be eliminated, although it plays a part of much importance in many of the cases.

Accepting the theory that all cases of hysteria are due to suggestion, the view has gained ground that not only are most of the traumatic cases due to pure suggestion, but that this suggestion in many instances has had its source in the examination by physicians of those injured or alleged to be injured. The rôle played by direct injury in the production of the nervous disorders presented by litigants by some has been belittled almost to the point of extinction. The mental element in causation, as well as in the clinical picture of the traumatic case, has been given a position of importance so great as practically to obscure all other etiological factors.

It is one thing, however, to recognize the psychic element in hysteria and quite another to believe that physical agencies may play no part in its production. In the majority of accident cases actual physical injury occurs, and the extent and character of this often has a determining influence upon the extent and character of the nervous symptoms presented. To exclude physical injuries entirely from the etiology of the traumatic neuroses would indeed be a happy solution for those who are called upon to compensate for injuries received or alleged to have been received, but this cannot be done with justice to all parties concerned. It may be said that such injuries simply act as suggesters, but even admitting this, merely for the sake of argument, they are the most powerful of suggesting agencies.

In examining cases in which injury is alleged great care should, of course, be taken not to suggest to a patient the presence of special symptoms, but even when this is unconsciously or inadvertently done, the clinical picture revealed by the examination is often such as could not be suggested at a first examination. It is easy to understand that a person may have the idea of anesthesia in this or that part of the body suggested by the use of instruments or appliances which are evidently intended to determine the presence or absence of sensation of touch, or pain or temperature; but it is not easy to comprehend that anesthesia thus determined shall extend exactly to the median line of the body or have a peculiar segmental localization. It is easy to understand that a patient may have suggested to him by methods of examination, even an impairment of vision or a diminution of motor power, or some other single, or perhaps more than one, symptom in the

complex of hysteria; but it is not so easy to believe, as I have already indicated, that a train of disturbances, sensory, motor, visual and visceral, can be elicited by a single examination. However these phenomena originate, by examination or by the unaided work of the mind of the one in whom the symptoms appear, even those who hold to the doctrine of suggestion as the active agent in the production of the phenomena are willing to admit their genuineness.

Litigants have their rights and injustice may be done by the too ready acceptance of the doctrine of purely mental or psychic causation in the production of hysteria. Two or three years since an opinion was rendered by the Supreme Court of the State of Pennsylvania which in effect held that damages cannot be recovered for injuries resulting from fright and not from actual physical harm. That fright alone may cause the most distressing result to health, or be even the chief cause of death, in some particular instance, might easily be substantiated by facts which have become historical. In most cases of fright, especially when this comes on in connection with an accident, this psychic phenomenon is itself associated with some serious physical condition and may be directly dependent upon physical cause. Fright assuredly may be an element in those cases in which, as the result of collision or sudden jar or fall, the individual so falls or is so projected as to be bruised or dazed, or otherwise evidently subjected to harm and distress. In these cases, and not improbably in all cases, the central nervous system, and especially certain portions of the brain, are temporarily the subject of important change from their usual normal state. While one may not be able to translate in exact explanatory terms such old and well-worn expressions as nervous shock and cerebral or cerebrospinal concussion, there can be no doubt that some physical perturbation actually occurs before or coincident with the psychic disorder, fright, or whatever else, alleged to be the chief agency in causation.

From the foregoing the following conclusions may be reached:

(1) Hysteria is a disease called functional, because its material pathology is not understood, although it has such pathology.

(2) It is a disease which has for its basis a constitutional condition spoken of with more or less accuracy as temperament, neuropathy or degeneracy.

(3) It is a disease which manifests itself by well-defined symptoms, motor, sensory, vasomotor, visceral and mental.

(4) Hysteria may be caused in a variety of ways, the chief of which is suggestion, although emotion, physical injury or disease and other causes may enter.

(5) Emotional phenomena are frequently present in hysteria.

(6) Hysteria is favorably influenced and sometimes cured by psychotherapy, but may require for its cure auxiliary measures, such as rest, drugs, food, massage, electricity, fresh air and change of scene.

(7) Hysteria is a psychoneurosis, not in a technical sense an insanity, and must be differentiated from psychasthenia and all the accepted forms of insanity.

(8) Hysteria must be differentiated from neurasthenia, although hysteria and neurasthenia are often combined in the same case.

(9) Hysteria is not simulation, although hysteria and simulation may be present in the same case.

## DISCUSSION.

Dr. Hill.—Dr. Mills' very interesting résumé and presentation of the subject of hysteria leaves us to accept one horn or the other of the dilemma. If we accept the proposition of Babinski we are in the position of the old farmer who visited the menagerie and saw first the dromedary. After gazing at it for a while, he said, "It looks like it, but durn it, there aint no such animal." Or if we accept the other horn and concur with the matter of suggestion, we are placed in an equally difficult dilemma.

I would like to ask the doctor if we accept the idea of suggestion exclusively how he would place a case of this kind? I was called in consultation to see a case, a servant girl who had been a little nervous during the day because she had trouble with her mother the night before, but had attended to her work. After luncheon her mistress went to call her and found her in a stuporous condition from which she could not be aroused. She had convulsions every few minutes and it was feared that she might have taken poison or something.

When I saw her she had a convulsion every four minutes; the doctor was holding the watch and timing her and would say as the time drew near, "now she will have another one," and she did. I thought it was largely a matter of suggestion and to convince myself diverted his attention and found that when the suggestion did not come the convulsion might occur too quickly, and once, on the other hand, it was put off ten minutes when the patient became particularly interested in our conversation.

# THE NEURASTHENIC AND PSYCHASTHENIC PSYCHOSES.

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The mental disorders which are discussed in this paper are of special interest to the asylum alienist, not because of their frequency, for in our experience at the Buffalo State Hospital they constitute only one per cent of the admissions (twenty cases in five years), but because of the relative lucidity and intelligence of the patients, the readiness with which they furnish a full account of their troubles, and their general amenability to treatment. Concerning the last mentioned point I venture the opinion that for severe cases of neurasthenia and psychasthenia the definite authority and the more or less rigid routine of a State hospital are extremely valuable aids in the re-establishment of will power and self-control. The conditions certainly remove some of the difficulties inherent in the management of these cases in private practice and to a less extent in sanitariums. I do not purpose, however, to discuss the well-worn topic of treatment, either general or psychic, of these disorders, nor yet to repeat familiar theories concerning their nature, causes and symptoms, but merely to present and comment upon the records of a few cases illustrating various phases and types.

It is necessary, though, in the interest of clearness and for the more orderly presentation of my material, to take some account of the question whether we are considering under these heads a single disorder or two fairly distinct clinical forms. While admitting, as we all must, a close relationship between neurasthenia and psychasthenia and recognizing the occurrence of many cases with well-marked features of both, I believe that the subject is much befogged by regarding them as identical, except in the degree of the mental involvement. From a consideration of typical cases, which alone are of value in establishing clinical forms, espe-

cially in mental medicine, I hold with those who see in neurasthenia a state of bodily and mental fatigue, mostly acquired, dependent on a great variety of causes, manifesting itself psychically by such symptoms as failure of attention and application, indecision, emotional instability, lack of self-control and a feeling of general uneasiness and depression of spirits—together with a host of nervous symptoms comprised under the term "irritable weakness"; and regard psychasthenia as an expression of constitutional neuropathy, relatively independent of fatigue or exhaustion, having mental factors far more prominent in the etiology, and characterized by morbid anxieties, fears and impulses.

I avoid as far as possible going over ground already well covered by Blumer, Collins, Courtney, Schwab and many others in the easily accessible literature of this subject in our own country by restricting myself to a discussion of severer and more complicated cases, most of the contributions referred to having dealt with what I may term the sanitarium rather than the asylum types.

I shall cite first a few cases of the neurasthenic type and then several which I conceive to be instances of psychasthenia; and as these histories lose much of their interest if too briefly sketched, I desire to recite them in some detail.

The first case is that of a young woman in whom the principal cause of the trouble was a severe anemia of long duration. The onset was with hysteriform features, but a relapse during convalescence was characterized by typical symptoms of neurasthenia. An accidental inoculation with Christian Science thought at just the right time had a happy effect, and furnishes an interesting exhibit in the form of a letter written by the patient explaining its operation.

L. M., a single woman, age 33, admitted June 13, 1907.

*Family History.*—No insanity or neuroses. Mother an invalid from rheumatism for ten years. Patient was normal in infancy and childhood. At school she was bright; she graduated from high school. At the age of puberty she became anemic and has never been entirely well since. Her menses are irregular, often absent. She has been regarded as notional and peculiar and nervous, and has had a morbid fear of disease; was recently under treatment by an osteopath. She and her invalid mother lived alone and not very congenially, each jealous of the other's demands, apparently.

*Psychosis.*—Her present illness began in February. She complained of being nervous, did not want to be left alone, demanded a trained nurse.

This not being supplied, she stiffened out in bed, holding her limbs rigid, and lay motionless for nine weeks, usually with eyes closed, rarely whispering a word or two. She had to be spoon-fed and she paid no attention to the calls of nature. In April she came out of this condition and began to walk about the neighborhood, sometimes at night, in a very nervous and depressed state of mind.

*On admission,* patient was very depressed, but she was composed in manner, talked readily and coherently; was quite clear as to time and place and her memory was unimpaired.

She said: "Everything is lost for me—even God cannot help me now. I just have to exist; it is terrible. If I could only forget what terrible things happened to ruin all my hopes! I suffered so much; my mind will go crazy or turn to stone or something."

This hopeless condition was brought on by lonesomeness, by being left alone when she was nervous. God had whispered to her to go downstairs, but she had not obeyed Him, and for that disobedience she would have to suffer in this world and the next. No other hallucinations were admitted. She explained that when she lay in apparent stupor for so long she felt too weak to move, and she did not think her conduct in this or any other respect had been irrational.

*Physical Examination.*—She is of good-sized frame and well rounded, but her muscles are soft and she is extremely anemic. The red cells number 3,600,000, and there is considerable poikilo-cytosis; leucocytes 6000; hemoglobin 35 per cent. Heart action is irritable and a soft, systolic murmur is present. Pulse rate about 90. She is dyspneic on slight exertion. Urine is pale; specific gravity 1010; no albumen or casts. She has slight exophthalmos, but no enlargement of the thyroid. Subjective complaints are: weakness, dizziness, palpitation, sensation of a lump in the throat. Pupils are normal; vision normal, but at times she sees black spots before her eyes. There is some tremor of tongue and hands. Further examination is negative.

The patient improved slowly under treatment with iron and arsenic, hydrotherapy and massage. She continued depressed for three months, but beyond some contrariness and an unreasonable disposition she did not display any marked psycho-neurotic traits. Then she gradually brightened up, and with returning health got into a state that was regarded as nearly normal, but she did not wish to go home and resume her dull life there. In January, six months after her admission, she returned from a visit of several days with friends, not feeling well—tired, suffering with a cold. She stated that she had been out on a very blustery day and got chilled and exhausted.

After this experience she grew rapidly worse mentally. She was nervous, did not sleep, complained of palpitation, flashes, sweats, excessive weakness. She spoke in a whisper; was unwilling to make the slightest exertion; objected to taking a bath. No improvement occurred until after six weeks, and then it was very slow. At the end of three months she was still in

bed and very fussy, counting her pulse and respiration, harping on her weakness and measuring her expenditure of strength with the utmost care.

A letter, which she wrote to me at this time, describes her condition better than anything I can say. It was written with such faint strokes of the pencil as to be scarcely legible.

"Doctor, if you wish my nerves to get well and strong, as of course you do, please don't ask me to do too large stunts at first, that only frighten me and use up my nerves instead of strengthening them. It matters not in what way, if I overdo, it causes my nerves and heart to get over-tired and sets me back. Up and down the dormitory and sun-parlor was most overwhelming.

"I know, doctor, you mean all right, but you can hardly know how very little I can endure. I know how it is for I have been through this several times before and know perfectly well from years of sad experience. That day when I went over to Mr. P——'s, the wind was blowing fifty miles an hour, and when I reached Forest Avenue I was so cold and numb and tired I felt as though I would drop dead. My nerve force gave out then, I suppose, and I am a bankrupt until my reserve nerve force is restored."

Gradual improvement continued and six months after her relapse she was in a fair way to get well, though not yet rid of whims and attributes of nervous invalidism. At this stage she made the acquaintance of another patient, a woman of culture, who was a Christian Scientist. From her she imbibed an interest in "Science," and the effect was indeed most striking. She announced that she was cured through this agency and given strength and wisdom to keep well hereafter. She became bright, energetic and self-reliant, and was eager to go out and spread the new gospel. So she went home and took care of her mother, assumed other duties, took a new and more cheerful view of life, and at last report was healthy and happy, preparing to get married.

Let me quote from a letter she wrote, announcing her salvation:

"Dear Mother: I have something to tell you as to the condition of my mind and thoughts. It has been now so long, nearly twenty months of that evil, erroneous, dark, wrong condition of my mind. It was hopeless to me. I could see no way out. I studied on my condition as to how I ever got into it, what it really was and whether there was any way of getting out. I thought of it religiously, metaphysically, physiologically and every way I knew how until I began getting the right thoughts, began seeing the truth, the light, the good, and I happened to hear a sentence spoken by a lady which made it all clearer to me—it was just the thoughts I had been arriving at. I began talking with her a bit, and lo, I had worked myself out by the great truth of Christian Science and did not know the principles of it. She is a Christian Scientist and a member of the First Church of Christ, Scientist, here in Buffalo. I began then studying it (I have her text-book, 'Science and Health,' her Bible and quarterly Bible lessons) and it is giving me the right thoughts, showing me the right, the good, truth, life, love, God. These are all synonyms, you know. The science or advanced

thought illumines the Bible—makes it so much plainer to understand what the great Mind, God, love, life, good, truth, right, are.

"My mind was in the wrong condition. I had thought wrong—I allowed the wrong to predominate till I got where I could see no good or God—myself, anybody or anything—when I at last reached what was, of course, just a hell—hell, death, evil, error is a condition of the mind where one can see or think no good—it is not a place way off somewhere—it is within us, just as we can have heaven, eternal life, good, right, God, within us. It is just as we choose—the right thoughts (or right mind, which is God) make us do right and be right, which is happiness forever, but the wrong thoughts of everything make us do wrong and be wrong and there is no hope or happiness.

"I began it years ago, and reached the climax that February, you know; though my body was healthy, my mind got all wrong, and as mind is everything and controls everything, I collapsed entirely—just from wrong-thinking, and hence wrong-doing and wrong-being. If your mind is wrong you will do everything wrong; and all will be wrong. But there is hope and life and good and love and God to him that overcometh the error, the death, wrong, evil."

My second case, though very unlike the one just cited, is interesting for the same reason, in that it gives us an inside view of an unusual psychological experience, largely in the patient's own words and, therefore, more definite than any general descriptive statements. It is the history of an episode in the life of a neurotic man of middle age, taxed beyond his endurance with work and worry, suddenly collapsing, losing his mental grasp and experiencing the sensation of his personality being split into two divisions—a higher and a lower consciousness, a material and a spiritual.

W. H. S., admitted November 25, 1905, is a man 55 years of age, a skilled mechanic and inventor. His parents and brothers and sisters were nervous, but there is no insanity in his family. His father was a somnambulist and was interested in hypnotism. When S. was a boy he was frequently hypnotized, and several surgical operations were performed on him painlessly while he was in this state. When his father died, he was so upset that he lay in a cataleptic trance with rigid limbs for several hours. He is afraid to witness exhibitions of hypnotism, fearing to succumb and do something absurd. He also dreads to approach the edge of a precipice because of the impulse to jump over. He is a poor sleeper; he has horrid dreams, as of falling; his health was never robust; in several attacks of typhoid and malarial fever he was delirious and "went double." He has had syphilis, which is cured; and some years ago he nearly lost his sight from nicotine poisoning, having smoked excessively. He has taken a moderate amount of alcohol to brace up on; he is very susceptible to its effects.

He has had the inventor's proverbial bad luck in seeing others reap the profits of his ingenuity, and he has for some years had serious business worries and felt chagrined and disappointed, though holding a responsible and fairly remunerative position. He has overworked and for at least a year has complained of being worn out and of a queer sensation at times in the top of his head. Two months age he got a pretty severe blow on the head and was rather dazed for several hours.

His present trouble came on suddenly yesterday, following an altercation with his employer. He resigned his position and went home, reaching there in a queer mental state. He said that while on the street something snapped in his head, and he felt the "other fellow" walking beside him. From that time until his commitment thirty-six hours later he was restless and excited; he had constantly the idea that the "other fellow" was beside him. When he went to bed he carefully arranged the covers over "the other fellow"; he would not feed himself, but said: "Give it to the 'other fellow.'" Once he said: "The 'other fellow' will not eat, but I am starving." To his children he said: "I am not your father, there is your father." It took him a long time to dress; he said: "You will have to wait until the 'other fellow' tells me to." When he reached the hospital he went back twice to the carriage to get the "other fellow" out.

The commitment papers stated that: "He looks about in a vacant manner and pays no attention to questions; his mind is a blank; he talks to himself, addressing his brain, which he says is divided into two parts, one of which is his working brain. He complains of being "so tired."

*On admission,* he said: "I am not Mr. S. The 'other fellow''s S." He asked if the "other fellow" was here and was unwilling to go to the ward without him.

*Mental Status, November 26, 1905.*—Attitude and Manner: Patient has slept well during the night; he is quiet and rather drowsy. He answers questions willingly, but as if speaking caused him an effort.

Stream of Mental Activity: He talks quite coherently and gives an excellent account of his symptoms, as follows:

His head went wrong suddenly last Thursday—"No, it was Friday" (correct). His head had been "awful queer" the last 18 months or two years. "Sometimes it felt as if the top brain was congealed." He could not think; his memory would flash away from him quickly; he would feel that he had to have a stimulant—liquor would fly right to the head and relieve the bad feeling, but he would not know what he was doing. He felt "awful tired" for a long time—"not bodily tired, but up here" (touching his head). He said: "If I slept 24 hours it made no difference, I was still tired."

When asked, "Have you any imaginations or strange feelings?" he replied: "Why, I get double, that's all. It seems to me the thinking faculties are separated from the physical. There is some cloud that shuts off all mental activity. The brain is like a great, white sheet on which is recorded every impression during our lifetime, and when that won't unwind again and

come around something is wrong." At this point the patient stopped and said: "The 'other fellow''s going away from me. I have got to give that 'other fellow' a rest. He has got to go to sleep." He pushed me away, closed his eyes, drew the bed-covering over his head and seemed to go to sleep. In a few minutes he opened his eyes and said: "If the 'other fellow' and I could have a smoke," and then resumed his story. "The brain is dead; it has no life; it feels like one brain above the other. The top brain, which is more useful—the one which works out problems and shows me how to figure my machines and inventions—is hard and dead. The lower is the one that is giving this account. Between the two there seems to be a chasm or film."

He asks for a pencil and draws a diagram, which he calls a cross-section of the skull, showing several tiers of lobes. He says this is the idea which is presented to him by his feelings. On invitation he discusses his business troubles at considerable length, and gives expression to ideas of inimical interests working against him, but makes no statements which are clearly delusional. He denies hallucinatory experiences of all sorts, except, as already stated, in regard to the "other fellow" hallucination.

He has good orientation in time and place, and his memory for both remote and immediate past is unimpaired, with the exception of a period of about six hours, the earlier part of the attack. He recalls nothing clearly from the time he left his office at two o'clock until about eight that evening, when he put his hand into his pocket and found some money which he did not have in the morning. He does not know how he got home—whether he walked or went on a street car. He remembers calling for some papers the next day and giving some directions, realizing that he must put his affairs in order; after that he "kind of sank away again." (His wife stated that he came in about four o'clock, exhausted, looking worried and strange. He said: "I've got something to tell you, but I can't tell you now; I've got to rest awhile." Later he said: "I have lost my job," but she could get no intelligible account from him. She learned afterward that he had left the office at two o'clock, and that he had been fussing with his papers and instruments for two hours before that, and seemed not to know clearly what he was about. He had taken a drink or two during this time and his symptoms may have been due, in part at least, to the alcohol.)

In specific tests he showed good attention and retention, but with evidences of increasing mental fatigue and difficulty in concentration of thought. Calculation was a little difficult, but he could subtract 7's from 100 to 0, in 60 seconds.

*Physical Examination.*—Patient is a man of large frame and good bodily development, but with a somewhat abnormal conformation of the skull and features. His head is very flat posteriorly, ears large and prominent, chin massive and protruding. He is fairly well nourished, weighing 145 pounds. Height 5 feet 10 inches.

As evidence of former syphilis he presents a cicatrix on the foreskin and several scars on the legs. The pupils are equal and react normally to

light and in accommodation; vision and hearing normal. There is no disorder of cutaneous sensibility. The knee jerks and other tendon reflexes are diminished; superficial reflexes normal. He has a coarse tremor of the tongue and fine tremor of the fingers. Heart and lungs normal; pulse 66, regular; arteries a little sclerotic. Evidences of mild gastric catarrh. Urine negative.

Patient was noted three days later as cheerful and quite natural in manner, eating and sleeping well. He says his head feels nearly normal—just a trace of the dead feeling remains. Whereas formerly he might have likened it to a saucer, with the convexity downward, dividing the upper from the lower part of the brain, he now feels only the narrow edge of the saucer all the way around.

The next day he was depressed and gloomy, dissatisfied over his commitment, disposed to criticise his family and the doctor for acting hastily. On the following day again much better, and a few days later a little exuberant, feeling better than he ever did in his life, which his wife said was highly characteristic—he was always either "away up or away down."

Then he settled down into a more uniform state and in a month was to all appearances quite well mentally, and in much better physical condition. He went home January 3, 1906, after being in the hospital a little over five weeks. A week later, having attempted several hours' work figuring on estimates, etc., he felt a return of the pain and pressure in his head, and had a restless night with broken sleep and bad dreams, but with renewed care against mental exertion he had no trouble of any importance and was discharged recovered.

Mr. S. was seen a few days ago. He is a very intelligent and interesting man, now in good health and quite normal mentally, cheerful, doing much better in a business way. He is actively engaged as head of a company manufacturing a machine of his invention. His cure was completed by a good vacation after leaving the hospital, and more satisfactory business associations relieved him of his worry. He has learned how to take care of himself. Overwork still gives rise occasionally to a numb sensation in the brain, sharply localized in the right parietal region. At first a mere point, if the warning is disregarded this spreads into an area of increasing extent. He does not permit it to get larger than a dime before effacing it by means of a few days rest or change.

The third case in this group presents as the feature of special interest points of resemblance to manic-depressive insanity. It was a second attack, the subject a bright young lawyer of sanguine temperament; there were several attempts at suicide; the duration of the illness was about 18 months.

H. G. R., a lawyer, aged 37, married, with two children, was admitted January 7, 1907, with a psychosis of five months' duration.

His family history is negative. He was always of a nervous temperament and not robust physically. From childhood he has been very bright, ener-

getic and ambitious. At 16 he suffered a nervous breakdown, attributed to overwork and dyspepsia. He went through the high school, studied law and was quite successful in his profession. He did not drink, but smoked excessively. Being optimistic, he got to living beyond his means and was forced to retrench. After selling his home and moving to more modest quarters he was dissatified, doubtful of the wisdom of what he had done; he did not like the neighborhood; the house was stuffy; he missed his accustomed walk to the office. He worried, slept poorly and could not attend to business. His brother's approaching marriage bothered him most unreasonably and obsessed his attention; he thought the whole town would be talking about his family—one brother getting married and the other selling his home. His wife said that he had no delusions, but only an unaccountable depression and worry. He was treated in two sanitariums without benefit, and then after several attempts at suicide was committed.

*On admission,* patient is neatly dressed, composed in manner, gentlemanly and correct in speech; he looks depressed, but talks freely, and though in deadly earnest, can smile and speak humorously of his faint-hearted attempts to kill himself, which he says is a "desperately hard thing to do decently and comfortably." He talks clearly and without hesitation or perceptible effort. He considers his case hopeless and is still suicidal. He shows emotion, weeping at times. There is complaint of nervousness in the top of his head—a feeling like cold air blowing on the head or sometimes merely an itching sensation. In the beginning of his illness he would first feel tired in the legs; then a nervous feeling would pass up to the solar plexus and thence to the head. Otherwise he feels in good health, but does not sleep well.

He gives an excellent account of his whole life, as already outlined, and of his present illness. He had been worrying over his financial condition and trying to sell his house advantageously; his brother's marriage caused a postponement of this, and he missed the chance to buy the place he had his eye on—the one he got was not so satisfactory. "Everything looked black" to him—East Avenue did not seem as attractive as before; his mind got clouded; he lost his nerve; his work bothered him; his brother's marriage was what ruined his life; they had to think and talk about it for months—as to what clothes should be bought for it, what presents given, etc.; it took his mind from his business and impaired his efficiency. He had impulses to commit suicide and "would go chasing over" to his father's barn to hang himself, but couldn't get in and would give it up. Regarding his work, he says: "I did not have my former energy and interest—I could not make it go—I was always accustomed to go slambang, but now I could not get up steam."

Patient shows no impairment whatever of memory, and his capacity for mental work, judged by the usual tests, is good. He calculates with facility.

*Physical Examination.*—He is a large, well-developed man, fairly nourished, but somewhat flabby and sallow. The physical examination is practically negative. (After recovery he was 30 pounds heavier and had a

good color; he was, therefore, more out of condition than we realized at the time of admission.)

He improved directly under a course of treatment, comprising a tonic, cold baths, light work and out-door exercise. He gained weight, slept well and was cheerful and energetic. After three months, being apparently well, he was paroled home. There he did not sleep so well and soon got nervous and depressed; he lost self-control under slight stress and "carried on in a hysterical way." He was returned at the end of five weeks, after another attempt at suicide. He was now in about the same condition as when first seen. He said his heart went down into his stomach. That is the only explanation he could give of his relapse; he got upset over a simple business transaction, which should not have annoyed him at all.

He is noted next month as improved physically; eating and sleeping well; often falling asleep during the day; dull, indifferent and lacking energy. He said he felt far less melancholy, and was in what he called a "quiescent" state." A little later he worried much and was emotional. His moods varied quickly from deep melancholy to a rather jolly state, in which he indulged in fooling and banter with his companions; this he said was a sign of extreme nervousness, sure to be followed by renewed depression and a feeling of exhaustion. At this time there was given voluntarily a confession of masturbation, with strong feelings of remorse and shame, and he asked for medicine and closer supervision to help him combat it. The existence of this practice in his normal state was always denied.

The next note shows him more cheerful, but becoming careless in regard to his appearance. He was occasionally observed to walk back and forth, grunting and blowing, perhaps bursting out laughing; once he climbed up a water pipe in the toilet room just to see if he could do it. These actions he explained as not due to excess of animal spirits, but to a nervous tension demanding some outlet.

This second phase of his disorder, beginning with the relapse while on parole, lasted about seven months. Then he underwent quite rapidly a marked change, becoming active, lively and talkative, ambitious, optimistic —returning almost at a bound to what his friends stated was his normal condition, though to us it suggested hypomania. His eagerness could not well be restrained, and after two months of this, as it developed no further but rather abated, he was discharged and went back to active work, which he resumed with good judgment and efficiency. When seen recently, more than a year later, he was in excellent health and free from all nervous and mental symptoms.

This case and others that have come under my observation, which I should like to report if time permitted, have led me to the conclusion that there is a close correspondence between the mental disabilities in neurasthenia and the manic-depressive psychosis. I find that the question of diagnosis as between these two disorders arises more frequently by far than that between neurasthenia and

general paralysis, which is usually stated to be the most troublesome. The eventual rapid recovery with rebound to an over-enthusiastic, enterprising and euphoristic mental state is common in both, as are minor fluctuations of mood and activity in the course of the illness; and this temperamental mobility is very frequently noted in both classes of patients as a characteristic of their normal states, though presenting as a rule somewhat different curves. Furthermore, one does not have to strain a point to see an essential similarity in the difficulty of concentration and mental effort of the one and the psychomotor retardation of the other, especially if one recognizes the frequent occurrence of anxiety in the manic-depressive psychosis and its modifying influence on the retardation of thought and action. This point of view, if it prove to be useful, is something gained from the separation of neurasthenia and psychasthenia as clinical entities, for so long as these are regarded as one and the same disease the relationship I have indicated is overshadowed by the phobias and impulses and other proper symptoms of the psychasthenic state.

The three following cases will serve to show some of these morbid ideas in action, along with the agitations to which they give rise quite characteristically in the psychasthenic psychoses.

The first of these is remarkable because of the onset with a severe delirium following psychic shock. Upon emerging from this the characteristic psychasthenic symptoms came to the front and were predominant for more than a year. A fairly good recovery ensued.

C. F. R. This is a man 60 years of age, married, clerk in a department store. He was admitted January 29, 1907. The family history is negative, except that his father died of apoplexy. The patient is described as an intelligent man, a faithful and capable employee in one establishment for over 30 years, but lacking self-assertion and independent judgment. He is of a reserved and quiet disposition, and has lived a very circumscribed existence, with no diversions and no variety of interests. He is said to be inclined to worry over trifles and to be always on the lookout for trouble, showing in this regard some marked peculiarities; for example, he never left his home without warning his wife to be careful about fire, and she has known him to leave the street car and return to caution her about locking the doors and windows. He has scarcely had strength enough for his work —was always exhausted at night and often equally so in the morning. He suffered with headache, and his digestion was poor. For three years he

has been subject to some kind of fainting spells at the store, but he never had any at home. He was not addicted to drink, but smoked moderately.

*Psychosis.*—Without warning he was given notice of dismissal, for the alleged reason that the force had to be reduced. His lessened efficiency probably had something to do with it. He returned home completely crushed; threw himself on the floor and sobbed; said he was "finished"; spoke of dying. A few days later he found it impossible to write up the books of a loan association which he had attended to for a long time, and got the idea that his accounts were wrong and disgrace was at hand. He made an attempt at suicide, following which he was sent to a hospital, two weeks after the loss of his position. Then he was in a state of active delirium, until committed to our care three weeks later. He had hallucinations of sight and hearing; spoke incoherently; thought his family had been killed; was violent. He had retention of urine and passed feces in the bed; was much reduced physically.

*On admission,* he was feeble, restless, *confused;* he answered some questions correctly, but was, in general, *incoherent.* He expressed delusions of wealth—said he owned the grounds; offered the attendant $2000.

Under examination the next day he appeared *exhausted and drowsy;* he wished to sleep; when aroused was apprehensive. He showed *marked clouding of consciousness,* with defective association of ideas and difficulty in thinking and acting harmoniously. His voluntary speech was limited to *expressions of fear* or questions *indicating anxiety:* "My wife was killed in a train wreck. Was my daughter drowned to-day? Wasn't my wife burned to death? I am going to be cut to pieces," etc. He again uttered *delusions of wealth,* but without exhibiting a mood in correspondence with these ideas, which were very vague. He was *influenced by hallucinations*—saw angels and heavenly light and heard voices. His *orientation was hazy;* he thought he was in heaven, in a cemetery, in a place to prepare for death; he knew the month, but not the year or the day; thought he recognized acquaintances about him. Memory, attention and retention were all similarly impaired. He had a measure of insight at times.

*Physical Examination.*—A middle-aged man, of slender build, in a poor state of nutrition; no malformations or stigmata; no evidence of syphilis or other constitutional disease. Temperature normal. He complained only of general weakness. The pupils were equal in size, dilated, reactions to light and accommodations normal; vision defective (glasses). Hearing somewhat impaired in right ear. Hyperesthesia of the skin, especially in the legs. Deep reflexes exaggerated; no clonus. Cremasteric reflex absent on left side; superficial reflexes normal. Speech tremulous and somewhat stumbling; gait and station unsteady (weakness?); fine tremor of tongue and hands. Lungs normal. Heart moderately hypertrophied, forcible in action; first sound impure; pulse rate 54 to 60; arteries sclerosed. Well-marked arcus senilis. Digestive system negative.

In a week he had improved very much, was quite clear as to time and place and could give a correct account of himself, without any evidence of

memory defect, except for the period of his delirium. He was depressed and uneasy, suspicious, reticent, inclined to dwell upon his weakness and nervousness. His manner was peculiar; when addressed he answered hurriedly as if flustered, and he had always a startled, rather wild expression. In another month he was not so well. He had sudden spells of agitation, one of which I observed. He trembled violently, stared wildly, gave a yell and jumped up as if in mortal terror; struggled with attendants for a few moments and then lay back as if exhausted; gasped several times, closed his eyes and whispered: "Oh, doctor, I'm an awfully unhappy man; somebody is after me; it is the devil, I think. Do you remember I said this is the house of death? Oh, I am going crazy." In a few minutes he was comparatively calm, and would answer questions.

He said that he had been worried all his life; that he was sick for a long time before he came here—his work was too hard for his constitution. His present condition is horrible—everything from his earliest youth up crowds into his mind, mostly unhappy thoughts. His mind gets no rest. He is compelled to count continually, anything and everything. He sees visions and hears rumbling and rattling. Here he begins to stare and shake again, but this is brought to a stop by a sharp command. He then looks all around the ward and remarks: "I can see everybody here—there is Mr. A. and Mr. B. and Mr. C.; I can see that plant there; I can see that table; I can see you, doctor." Though much better physically, he insisted upon staying in bed. Being forced to get up and go around, he complained much of vague fears, of a feeling of strangeness; everything looked different—the opposite to what it should. He had to turn everything over in his mind, and to seek a meaning in all that he observed. He was in a puzzled state all the time, with keen realization of being abnormal. He says, to illustrate: "There goes a wagon—that's W. & Co. Now see that smoke over there—that makes me think of the spray over Niagara Falls. I know that is the Allbright Art Gallery over there. Now this morning, when the patients went out, I counted them and there were just 26—that was just my age when I got married; and presently the women came along, 22 of them—that was my wife's age when she married me. Now, why was that? She will be an inmate here pretty soon, I think. Oh, I have been fighting it and resisting it, but I can't stop it—that's the way my mind works." If he tries to read the paper he feels compelled to pay attention to the divorces, scandals, murders and other disagreeable items, each of which distresses him, because he is sure to recall someone of the same name, or one like it, or at least he knows some person on that street or in that town. He figures out some connection, no matter how strained the relation. If he turns to the magazine, everything looks upside down—no sense in it. If he looks abroad the prospect appears dim and gloomy, even when he knows that the sun is shining. He is haunted by the idea of suicide, though he does not want to kill himself; this is worse, since another patient made an attempt of which he has heard. He saw the figure of a man in his room at night, who held up a sheet and showed him how to hang himself with it.

These symptoms disappeared, gradually, until at the end of six months the patient appeared to be very much better. He was in good health, as a rule cheerful, pursuing a certain routine of work with alacrity and apparent satisfaction; interested in and even enthusiastic over baseball, and enjoying reading. No further admission of any abnormal thoughts or feelings except a vague fear and nervousness at night, but he lacked confidence in himself; had a helpless feeling in regard to outside responsibilities and preferred to remain in the hospital. Regular out-of-door employment during the summer was of decided benefit. He acquired more self-assertion and spontaneity, and when discharged, September 30, 1908, after one year and eight months' treatment, was in better mental and physical health than in several years prior to his illness.

Mr. R. was seen recently and found to be very well, in spite of failure to get regular employment. He takes life more easily than formerly, appreciating that worry was what overcame him. He now tells of a previous nervous breakdown at the age of thirty-one, less severe and of shorter duration. No history of sexual excess or preoccupation at any period is obtainable in this case.

The following case is a good illustration of the minor rôle played by fatigue and bodily ill health in the etiology of the type of disorder now under consideration, and emphasizes the psychogenic factors and the constitutional basis.

P. N., first admitted May 23, 1898. Patient is a wood-carver, aged 32, married, has four healthy children.

*Family History.*—Parents normal. A maternal aunt was insane and a paternal uncle committed suicide. A sister suffered from "nervous prostration." His brother and another sister are normal.

*Personal History.*—Patient was born in Germany and came to this country at the age of 14. He is a good workman, of temperate habits, and until recently has enjoyed excellent health and been in good spirits. For two or three months he has been melancholy and nervous; could not sleep; lost weight.

*On admission,* he is greatly depressed and agitated, weeps and makes despairing gestures. He accuses himself of responsibility for the misfortunes of others, and fears indefinite calamity for himself and family—his child will die because a child of the same name died; the whole world is against him; he is to be cut to pieces, etc.

In the hospital he tried to strangle himself and beat his head against the floor. He improved after the first month, but slowly and with recurrences of depression. He was noted as hypochondriacal, nervous and unstable, easily upset and discouraged, lacking in self-confidence. His principal complaints were headache and insomnia. He was much benefited by regular outdoor work. Discharged recovered, after 11 months.

*Second admission,* February 17, 1908. His wife stated that he remained quite well for seven years, but in the past two years has had several mild

attacks of depression. He takes more alcohol than formerly and uses tobacco to excess. A year ago he consulted an oculist because of black spots before his eyes and now wears glasses. The present severe attack began a month ago, and is similar to the previous one, but with more pronounced delusions. He accused his wife of sexual relations with a dog, and says she bore a litter of pups. He was agitated and apprehensive, feared his brother-in-law would kill him; ate and slept poorly; attempted suicide.

*On admission,* the patient acted as before; he tossed about in the bed, moaned, grasped his head, cried loudly. He said: "I can't get the thoughts right—peculiar ideas come into my mind which I can't help; I haven't any feeling at all—I'm living and that's all." The disgusting idea about his wife and a dog comes into his mind and he cannot banish it; she is a virtuous woman and he knows she could not be guilty of such a thing. He declared that he was a disgrace to the world—his children would all be insane—it was all his fault for having practiced self-abuse in his youth.

He denied hallucinations, but had several times imagined that he heard footsteps of persons coming into the house to kill him. He was oriented and his memory was good, but his attention was preoccupied and calculation was difficult and exhausting.

*Physical Examination.*—A well-built man in good nutrition—height 6 feet, weight 164 pounds. Complaint of "numbness all over" and a heavy weight on his head. Pupils somewhat dilated, equal, good reactions; vision and other special senses normal. No objective disorder of cutaneous sensibility. Tendon and skin reflexes normal; hands tremulous. Thoracic organs normal. Tongue coated; bowels constipated.

For two weeks there was little change; then he rapidly improved and was soon cheerful and active, eating and sleeping well, working, talking about going home, wondering how he could have gotten into such a state and had such distressing ideas. The suggestion of his wife that he seemed well and might now get back to work upset him when he was apparently doing well at the end of three months. The thought of assuming responsibility gave him a "panicky" feeling, and he again had insomnia and was depressed. He complained of many bad feelings—his right leg felt "loose like" and, later, stiff and unnatural. He wanted to know if we considered him a paretic, and explained that his legs felt that way after he had observed a paretic whose legs were affected. He remarked that the trouble in his own case was doubtless imaginary, and that he was inclined to let his mind be controlled by notions. Other complaints were: that he had a dry fever; felt hot from the stomach up to the head; was forgetful, "kind of uneasy," over particular—whatever he did had to be "just so" and he was always afraid he had not done it right.

He went back to bed and stayed there; said: "I am down and out—all weakened out—my manhood all gone—I have no confidence in myself." He talks at great length about his symptoms and his worries, and as usual refers to sexual practices in earlier life.

In this and subsequent periods of depression he furnished very detailed information concerning insistent morbid ideas bothering him since he was a boy. He would be at his work on the farm and suddenly there would come over him a terrible feeling of loneliness, or an uneasy feeling that would impel him to drop his task and go to his mother. He was bothered less in this way as he grew older, but a change came over him about a year before his first commitment; he was run down in health and suffering from stomach trouble at that time. Since that time he has never been entirely well, but has had some trouble "in the back of his mind." He says: "I get two different kinds of feelings. Sometimes I feel well and bright and happy, but even then there is always in my mind the thought that something might turn up to make me unhappy again. I get pretty near the top notch, but not quite." Now, every time he visits his home something "strikes his mind" to upset him; he gets a distressed feeling at the pit of his stomach that "gives intensity to his thought," also a slight, uneasy feeling in the forehead, "in the thinking apparatus."

Since his first breakdown his work has bothered him; a reproof from his foreman made him so nervous he could scarcely do anything; a nail or a splinter in the wood he was carving annoyed him; he had trepidation about undertaking each new task, whereas formerly he wanted the most difficult pieces to do. He has been troubled, too, pretty constantly, with vile, dirty thoughts and imaginations obtruding themselves in his mind. He scrutinizes his younger children and cannot rid himself of the unworthy suspicion that they are not his; a dimple in the chin of one reminds him of his brother-in-law and leads to the thought that his wife may have had relations with this man. That idea accounts for the fear of him exhibited at the beginning of this attack. The idea of his wife and a dog he traces back to a time when they were children together, and her father had a big dog which in play would jump on the children and knock them down.

The history, from the date of admission to the present time, is a succession of variations as above described. He is robust in appearance, an excellent worker, intelligent, brisk, trustworthy on parole when he is feeling well; and for weeks at a time one would have difficulty in detecting anything wrong with him. But let him be subjected to any possible stress, be thrown on his own resources or called on to make a decision in any matter, and all the symptoms recur. Allow him what he asks for and he is pretty sure to change his mind and decline it, on the ground that on thinking it over he has become nervous and distrustful of his ability to do what he had proposed. So, for example, a trip to the summer cottage had to be given up at the last moment; and innumerable instances, many of them ludicrous, could be given of his vacillation and indecision. This weakness is so well recognized by himself that he has repeatedly advised us not to grant any of his requests, no matter how strongly he may urge them; and so far as possible this is the plan adhered to.

To conclude this series a case of "compulsive insanity" is reported, in which, owing to the prevalence of epilepsy in the family and the sudden appearance and disappearance of the morbid mental symptoms, the question of its relationship to *petit mal* has been raised.

S. B., a married woman, age 29, born in England, was admitted January 2, 1904. She had a *bad family history,* her mother, a maternal aunt and a sister being epileptic, and her father having died of tuberculosis. The patient is somewhat deficient in general intelligence and may be noted as "constitutionally inferior."

*Personal History.*—She had mumps in childhood and diphtheria and measles since she grew up. She was married eight years ago; her husband is alcoholic. She has borne four children; two were still-born, one died a few hours after birth, the fourth (now 20 months old) is healthy. Nine years ago, when she had diphtheria, her two sisters died of that disease. During her convalescence she was morbidly depressed and wanted to commit suicide; this attack lasted two months. She had a second attack of depression two years later, lasting a few weeks and disappearing suddenly; this time she was not suicidal. Her third attack was 20 months ago, when her third child was born, just previous to which she was severely ill with measles. The mental symptoms came on suddenly, a week after her confinement. She felt sad and worried and had a strong impulse to kill the baby. Again she got well suddenly, after three months, and remained well until the onset of her present, the fourth, attack, eight weeks ago. The trouble came on when she was worried over the child's trifling illness. At first she had a persistent impulse to kill the child, and later to kill anybody. She fought against the feeling, wept much, begged to be watched and prevented from doing it. Upon awaking in the morning the impulse to kill was stronger than at any other time. She threatened to kill herself in order to keep from killing anyone else.

*On admission,* the patient was in good general health, with the exception of some gastric indigestion and various abnormal head sensations. The physical examination was negative; her height 5 feet ¾ inch; weight 121½ pounds. She was somewhat undersized, but well developed, and presented no stigmata of defect.

*Mental Condition.*—She was depressed, with good realization of her trouble. She talked intelligently, had no delusions or hallucinations, was entirely clear as to time and circumstance, and had a good memory. She gave an excellent account of her symptoms, describing the homicidal impulse as overwhelming in intensity, and affecting her like some compelling force external to herself. When the trouble started she felt a heavy weight on the back of the head, then a drawing sensation in the same region, and later a frontal headache. Sometimes the head had seemed to be opening up. She feels nervous and sometimes has twitching of the arms and legs, but has not lost sensation in any part.

There was immediate improvement, owing to a sense of security in the hospital, but she continued depressed—having to worry about her home and anticipating a long absence from it. At times the bad feelings recurred, with pressure in the head, which she once said felt as if "ice water were dripping on the brain."

She was paroled home in April and discharged in June, apparently quite recovered. She was *readmitted within a month* with the same symptoms as before, and we learned that while at home she continued to have recurrences, but controlled herself until she no longer felt the restraining influence of the parole.

Patient was now very emotional, thoroughly discouraged; she again suffered from indigestion and had vomiting spells. Her head felt like it contained blood or water rushing from behind forward and drifting down; the top of the head seemed to be drawn up into a peak; the brain felt cold. There was dull headache, at times severe; no dizziness. The course was as before, but improvement was more uniform and rapid this time. She seemed much benefited by glasses correcting refractive error. At the end of three months she was again paroled, and four months later was discharged recovered, February, 1905.

Patient was *admitted for the third time* in December, 1905. Her condition was the same as before. She stated that during the first three months at home she was still annoyed at times by the bad feelings; then they suddenly left her and she was free until their equally sudden return eight weeks ago, caused no doubt by worry over her husband's intemperance and bad conduct.

It will suffice to say that she was again discharged in good health and spirits, April 15, 1907. She has now spent two years away from the hospital, during which time she has borne another child, and notwithstanding this and other adverse conditions she remains very well.

I had intended to discuss as a part of my topic the differential diagnosis of psychasthenia from dementia præcox, in which traits of this psycho-neurosis are so common; but as I lacked space to include cases illustrating this difficulty I merely refer to it here.

In our series, constituting the small percentage of admissions noted at the beginning of this article, no cases are included which showed progressive deterioration, no matter how marked might be the obsessions or corresponding symptoms. This care I am inclined to think is not universally exercised, and the lack of it engenders confusion.

# CONSCIOUS EPILEPSY.

By L. PIERCE CLARK, M. D., New York City.

As a general rule loss of consciousness occurs in grand mal epilepsy some time during the fit or spasm. In slight seizures, that of minor epilepsy, consciousness may merely be impaired or even retained. This statement should, however, include also the minor or partial attacks of Jackson's and Bravais'.

Cases of so-called genuine grand mal epilepsy have been reported at rare intervals with full retention of consciousness by Newmark, Doussin, Radcliffe, Reynolds, Maxwell and Tamburini. Careful analysis of these rare cases, however, usually leaves much to be desired in the completeness and genuineness of the attacks. Even though one admits these cases as idiopathic epilepsy and not hemiplegic epilepsy, one is forced to believe that the cases are idiopathic epilepsies with local or Jacksonian onset with a regular order of muscular march. Indeed every grand mal attack must have a local onset; the march of the fit is so rapid, however, that detailed study is usually impossible. A localized maximum irritability of the cortex must be postulated in most cases of genuine epilepsy. Notwithstanding we have a perfect right to shift the burden of proof for the loss of consciousness in genuine idiopathic epilepsy (no adequate explanation for that phenomenal mystery is yet at hand), one may summarize the theory of the general loss or retention of consciousness in epilepsy as follows: In minor epilepsy the cortical discharges are either too slight in degree or too slow in cortical discharge to abolish consciousness. In partial convulsive epilepsy the discharges may be both sudden and severe in degree, and yet, because a part of the cortex is left functionally intact, consciousness will be preserved in greater part. Moreover, even in so-called genuine grand mal epilepsy, as in my cases, the complete involvement of the whole body in convulsion, providing there be a regular order of march in the fit, still admits of consciousness being

more or less completely retained throughout the attack. Here we must suppose that the brain gains a certain degree of preparedness for the attack and consciousness is not so much disturbed but that memory of the important event of the fit endures in the after conscious state. The manner of return to full normal consciousness after the fit furnishes not a little clue whether memory of what transpired in the fit will be recalled. The analogy of the amnesia following dreams is a case in point. Thus most dreams are forgotten on waking; the vividness of a dream does not mean it will be remembered. In a close analysis of many epileptics one finds plenty of evidence that a sort of cerebration goes on in many fits, as in ordinary sleep; in both but a small part of the cerebration may or may not be consciously preserved.

The majority of epileptics undoubtedly recall that they have had seizures, although in many cases this would be inferred from their sensations, attitudes, etc. The more violent the convulsive movements, the longer the after stupor, the less is remembered. These considerations, however, concern not so much the retention or abolition of perception in the attack, the object of our thesis, as retrograde or ordinary amnesia with partial return of memory. This latter phase is only a part of our special problem. Even though complete abolition of all reflex activity in the fit does not obtain, consciousness may be entirely lost; it can not therefore serve as a criterion. The reverse of this is seen in the trance state. Again, the corneal and pupillary reflex may be retained in grand mal and consciousness may not be retained. Adequate proof is equally difficult from the standpoint of recollection.

Finally, we may summarize our views as follows: Those cases of epilepsy in which consciousness can be fully proven to persist in the attacks are either minor epilepsy, petit mal epilepsy, epileptoid states or psycho-motor equivalents, partial or abortive epilepsy of organic or non-organic origin, or, not epilepsy at all, but one of the many protean types of grand hysteria.

Bearing these remarks in mind, I shall now cite briefly three very unusual cases of convulsive epilepsy with full retention of consciousness. I have carefully studied these cases for several years.

Case I.—L. B., 17 years old. Epileptic and neurotic heredity. The patient was robust and apparently normal until she developed epilepsy at

13. Her idiopathic partial attacks developed in the right arm, starting from the biceps. She has an epileptogenic zone area, as marked in this picture of the patient. Any slight irritant in this area precipitated an attack whenever the centers were ready for the fit. The attacks may be prevented for a time by keeping the arm quiet and free from irritation. These partial attacks were invariably followed by transitory exhaustion palsy, both sensory and motor in character. The attacks could be inhibited in part by day, but occurred twenty or thirty times a single night. Inasmuch as the patient had no mental stigma of epilepsy, never lost consciousness in attacks and bromide increased the number of attacks per day, the condition was thought to be hysteric in character, with an hysterogenic zone. The above condition had been present for about two years when I first saw the attacks. The attacks, which had now become general, were as follows. I saw several hundred of them and the following was typical.

The patient is awakened out of a quiet, sound sleep by a tonic spasm or cramp in the right biceps. The spasm quickly spreads in a few seconds in the following order of march: right arm, right leg, left arm, left leg and face. The spasm is then a slow gyratory contortion, throwing the patient from the bed, the eyes are wide open and staring. The attack ends in a few coarse choric spasms, during which latter phase the patient may be able to prevent injury to arms and hands by clinging to the bed. Tongue is bitten and urine is voided. The patient is then able to relate all details of what happened in the attacks. In several of these attacks the patient was able to answer simple questions and give directions for holding her and protecting her with clothing while in this highly dramatic type of fits. The breathing is labored and the conversation is necessarily fragmentary. The attacks are painless, in sharp contrast to Case III. In about one-tenth of the entire number the patient is totally unconscious in the attacks and has no after recollection of the fits.

An unconscious attack is as follows: Patient, as before, was awakened from sound sleep by the biceps contraction, the shoulders were elevated and the head was drawn down and forward on the chest, then the shoulders were lowered and the arms were abducted from the body. The right wrist was flexed toward the body, the fingers were in *main en griffe* position throughout the tonic period for five or six seconds. Pupils were dilated and irresponsive as usual. Consciousness was maintained up to this point as usual. The fury of the clonic spasm, more than usual, increased suddenly in violence at this point. The left hand was broken from its grasp on the bed rail and was thrown about wildly, clutching at the air. The feet in equino-varus were crossed, the face became cyanosed, patient said, "No use! no use!" and immediately lost consciousness. Eyes rolled upward and inward, urine was voided, and frothing at the mouth in stertor period followed. To those who believe loss of consciousness is necessary, the epileptic genuineness of the last-described attack must be fully convincing. Taken by themselves, appalling as they were, I am sure no one would hastily designate the attacks of the first-described epilepsy as *minor*

epilepsy. It is true they were a little less severe, as a rule, than the last-described, where consciousness was lost, but this was by no means always the rule. The case is also one of the very few illustrating the presence of an epileptogenic zone.

Case II is that of a young man of 18, who has had idiopathic grand mal attacks since childhood. Mental state, feeble-minded. He has had prolonged periods of status and post-epileptic exhaustion. The attacks, as may be seen from the accompanying photograph, are general and grand mal in character. The order of march of the fit was too rapid for analysis. It seemed to start in the right hand and face first. In the attack photographed here, one of thirty for that day, the patient answered many simple questions, told me the attack pained him in the right arm, that his head ached and that his "neck was breaking." His utterances were not distinct, as both sides of the face were in rigid spasm at the time. Tongue was bitten and urine was voided.

Case III is that of a young man of 24, of epileptic and neurotic heredity. His grand mal epilepsy, of unknown origin, began at twelve years of age. The attacks continued weekly for one year, then ceased altogether for three years. The epilepsy reappeared at 16 and continued to occur three or four times a year until he was 23 years old, at which time the ordinary grand mal epilepsy, classic in all respects, was supplemented by grand mal attacks of focal onset and a regular order of muscular march over the entire body. These attacks were attended by full consciousness during the attacks and complete recollection of all the horrible details of the fits. The attacks had a tendency to group themselves in serial and status periods. The patient has had status of 300 conscious attacks daily on several occasions. The grand mal character of the attacks may be proven by the pathetic description the patient has given me in a recent letter. I will give it verbatim, as it is a document of more than ordinary human interest.

"Dear Doctor.—I will try to describe my feelings during the attacks of epilepsy.

"First of all I feel a knocking from the back of the neck to the top of the head, then there is either an itching sensation in the throat or a sense of fullness, or a feeling as though there was a turning on of water in the throat and shutting it off suddenly. A few seconds after, my head swims, the right side of my face screws up, and then when I feel this I know I am in for an attack. My right hand stiffens, the arm twists and then my right leg grows stiff, then the left arm and left leg and, finally, the whole body grows stiff and rigid. My head then turns to the right side, jerking and twisting all the time. I cry and groan, the pain of the twisting of the head off the shoulders is so great. Just as the head twists, so the whole right arm knots up and twists above my head. The grinding, twisting pain is horrible. When this painful agony is just at its worst, the stiffening over all the body lessens and my limbs are thrown, knocked about and bruised. Sometimes when the spasm leaves the left arm first, I reach over with it and hold the right arm and the head from the hardest thumping.

L. PIERCE CLARK.

Case II.—J. P. Photograph of a grand mal epileptic fit during which there was retention of consciousness.

Case I.—L. B. Genuine convulsive epilepsy with retention of consciousness in seizures. Outlined area on right arm is an epileptogenic zone.

"The general feeling is as if I'm continually shocked by a powerful current of electricity, starting in the head and shooting out into the limbs. The grinding, twisting of the bones and joints are too horrible and awful to describe. I sometimes wish the bones would break and relieve me. The most awful pain is at the head and in the right arm, whether the attack is grand mal or partial. When partial I hold the head and right arm to some extent by means of the left hand; this keeps down the pain somewhat. The force of my right hand as it twists up to the head is so great at times that a strong person is powerless to keep the member down. My mind is always clear in these attacks and is only bothered in keeping track of what is going on around me by the enormous pain which I suffer in my body. The head inside does not pain me until after. Usually I can talk out but a few words, cry for help and wait until some one comes and helps me hold the fit from destroying me. I dare say my fits are different than ordinary sufferers of epilepsy in that their attacks seem to affect their mind in such a way that they don't know they are having a fit. I have fits just like they do, but I am not unconscious. Twice I have had these fits for two weeks at a time on an average of 300 a day. At these periods I suffer the tortures of the damned. I would very willingly undergo an operation if necessary. I think I would survive; if not, I don't care. I am absolutely certain there is some pressure on my brain and if nothing is done soon I am positive I'll die soon in one of these awful attacks. The pain is so enormous. I fervently pray you can relieve me. Have pity on my awful fate and set me free by operation or death, or both."

All three cases I have given are genuine convulsive epilepsy in which either the cortical discharges are slow or incomplete. Consciousness is, therefore, more or less completely retained.

My first case is not unlike in some respects to Lemoine's case in which the crisis developed suddenly; the patient grew pale, became rigid and braced herself against the wall in her chair to avoid falling. While in this tonic stage, her jaws became set and she had great difficulty in talking. The tonic stage, which affected the muscles of the trunk and extremities, was succeeded by a classic clonic stage. During the entire period she conversed with Lemoine, her jaws still locked. She replied intelligently to a number of questions. In the wildest of her conscious convulsions Lemoine had to hold the patient, as in mine, to prevent injuries. As in my first case, there was no cry, no frothing at the mouth and no biting of the tongue. Restriction of respiration invited pallor, succeeded by cyanosis, which, in turn, disappeared as respiration was resumed normally. Convulsions were succeeded by profound physical and mental prostration, as in ordinary epilepsy. In an elaborate and convincing study Lemoine excluded hysteria. Le-

moine, by constant tapping of knee-jerks, as in another of my cases, was able to induce occasional attacks.

In another of Lemoine's cases the man was able to give details of his feelings in the attacks. They were not unlike my third case just given. He felt, in his own words, "rigid and thrown violently on the ground." He felt himself "shaken" and felt an "indescribable malaise" during the seizure. Prolonged watch and study of the case proved the conscious nature of the convulsions. He conversed throughout most of the attacks, as in my case, with fragmentary speech. Hysteria was excluded. In one of his conscious fits he bit his tongue and passed urine.

In Lemoine's third case the attacks were major convulsive seizures with an epigastric aura, attended by a short tonic and prolonged clonic period. Again, as in my first case, this boy was able to converse during the convulsions only up to a certain point. When the convulsions became extremely violent and cyanosis was marked, consciousness was slowly but definitely lost. Stertor followed these latter attacks. [It may be interesting to state that I wrote this paper in the belief that such instances of classic genuine convulsive epilepsy were rare if not unique. A review of the literature has revealed the above cases just cited, which in very many respects are not at all unlike mine.]

It does not seem probable that the explanation of conscious epilepsy can be based on the topographical doctrine that the convulsive and conscious areas are not simultaneously affected, nor that the discharges are purely in the motor elements of the cortex. Nor are there good reasons in the parallel that retained consciousness in grand mal epilepsy is of the same nature as that occurring in psychic epilepsy. Time forbids our discussing this point.

To restate: A tentative explanation may be ventured for the presence of consciousness in genuine convulsive epilepsy. Consciousness is retained, as a rule, in genuine convulsive epilepsy just in proportion as the onset of attack is deliberate and focal. Consciousness is lost in direct ratio to the degree of completeness of these cortical discharges.

Finally, I wish to urge a more careful analysis of the disorders of consciousness, both in epileptic fits and in epileptic stupors. Such studies would not only be of forensic importance, but would throw not a little light on the nature of disturbance in consciousness in deliria, hysteric episodes and the stupors of the catatonic states.

# DEPRESSIONS.

By E. MOORE FISHER, M. D.,

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The depressed emotional states have been especially interesting to me ever since I first became identified with the institutional care of the insane. The idea for this paper grew from the fact that I could find nothing in the literature that exactly expressed my views on this subject. It may appear that a return has been made to the older classifications and that what is said will seem similar to what was formerly described *sui generis* as melancholia. This has not been my idea, but rather an attempt to clear up some of the odds and ends which have obtruded themselves on me during my work. Since this paper was begun several articles along somewhat similar lines have appeared, although not exactly giving expression to my thoughts.

It seems to me that the term depressions instead of melancholia has been used advisedly for the reason that writers of different nationalities continue at loggerheads on the subject of classification of insanity. Those who follow Kraepelin use the term melancholia little, if at all, since Dreyfuss has placed practically all cases that show depressed symptoms at the time of involution in the manic-depressive group, and that appears to have been agreed to by Kraepelin in his introduction to Dreyfuss' article.

Ziehen, on the other hand, continues to write of melancholia, describing it as a psychosis whose chief symptoms are:

1st. A primary, continued, motiveless or insufficiently motived depression.

2d. A primary retardation of the course of ideal presentations or mental inhibition.

The first symptom being never wanting, though the second may be transitory under certain circumstances. The depression in the cases he described as primary is not the result of delusions, as of persecution, and the inhibition is not produced by fascinating or engrossing hallucinations. He differs from many other conti-

nental writers in the age incidence of melancholia and thinks the term should not be restricted to cases occurring about the time of senile involution. He states that cases of true melancholia even in childhood have come under his observation and that 90 per cent of the cases he describes as melancholia should recover, but that he had 22 per cent of relapses included in these statistics. He also considers termination in secondary dementia very uncommon except where melancholia is superimposed on arteriosclerosis.

The most exhaustive treatise on depressions that has ever been written is Burton's Classical Anatomy of Melancholy—the life work of a melancholic. This work includes too much, as Burton believed that almost everything might have the tendency to lower a person's spirits and has reviewed the literature on this subject from the earliest times in his own peculiar way.

Everyone who has had the opportunity of observing mental diseases has seen numerous cases of excitement in the sane, or acute maniacal attacks in the insane, and it is not to be doubted that there are analogous though less likely noticeable attacks of depression in both classes. These may be of brief duration and are often concealed by those afflicted, or may persist over protracted periods; and though in nearly every psychosis, using for the occasion Kraepelin's classification, we see at times a period at least of depression, not every depression is a symptom of an impending or present insanity. All of us have days when we do not feel as full of vitality as at other times, nor do we have the same zest or enjoyment of life. We are not all victims of mental derangement because of these temporary depressions. Fatigue, worry, changes in climatic conditions, irregularities of diet, continuous or monotonous employment and impaired excretory functions may all be attended by depressed conditions. Many people, following a severe illness, or prolonged labor, either physical or mental, with insufficient rest, have a period of depression, thus lending force to the old truism, "No action without a reaction," or as Clouston has written, "Periodicity or a tendency to alterations of elevation and depression is a very common characteristic of mental diseases. It is in its nature the exaggerated or perverted physiological, diurnal, menstrual, sexual or seasonal periodicities of the healthy brain."

There is no doubt that as a rule when the contributing cause is removed, if this is done soon enough, the body and mind are able to recuperate rapidly. It is equally certain that in some cases the injurious strain is too prolonged, with the result that the mental mechanism breaks down. Some persons, especially those of a neuropathic taint, seem to be almost always depressed. They are gloomy, even morose. They seem unable to enthuse over anything, and often that which produces a pleasurable feeling in others tends to lower their mental tone. Much is seen in the shadow; little appears bright. They may be conscious of a feeling of fear, crossing their bridges before they come to them, and worrying either over happenings in the remote past or what will take place in the future. Some of this is due to a distrust; some to an exaggeration of the normal function of fear or timidity. Instead of these feelings stimulating the organism to increased vigor to offset the conditions that confront it, they render it unable to cope with these conditions. The mind is unable to grasp properly the surroundings and because of this gives in easily to every untoward circumstance invading its horizon rather than rising phœnix-like from the ashes of destroyed hopes.

These people are frequently troubled with insomnia and often are given alcohol or morphine to overcome this distressing symptom. They notice a slight stimulation often follows the use of these drugs. This may be the start of their excessive use, and consequently often leads to a commitment to a hospital or sanitarium. There they have a chance to observe how they have injured their systems and damaged their lives.

After a period of inactivity and introspection they are apt to be again left with their battle against their feelings. They are then frequently discharged when more depressed than ever; they are unable to immediately resume their former place in the world. They worry more than previously; to them the only outlook in life appears to be the necessity of using something injurious to make them brighter and happier. This they know will be followed by increased remorse and possibly re-incarceration. After vain endeavors to face the battle of life they end it all by an overdose of a drug, a pistol shot, or other means with the same result.

The first symptom of mental disease is frequently depression. People may not notice they are ill, and if spoken to about it

brighten up temporarily so as to deceive a casual acquaintance or to render it impossible to give any positive medical opinion as to their condition, even after a thorough and protracted mental and physical examination. A common characteristic of persons suffering with a depression of this kind is that they are frequently utterly unable to see anything peculiar about themselves, either as regards their actions or thoughts. It is also hard, if not impossible, for them to take strangers into their confidence, and those who judge them by a brief or casual observation are usually deceived. Those who are most constantly their companions see the first signs of a fit of depression, which the person afflicted often unconsciously shakes off if others are present and appears to the latter as normal or possibly as quite a lively individual.

This condition renders patients difficult to aid; they cannot conceive of anything being the matter with them; they resent suggestions, considering them interferences. If a change of air, a sea voyage, a hunting trip or similar lines of treatment are suggested to them, they scout the idea. "There is nothing the matter with me," "I'll be all right in a few days," "I can't leave my business," are a few of the excuses forthcoming. They may even go so far as to think those who wish to help them are the ones who require treatment. If the unfortunate one is prevailed upon to try any of the above changes from his usual mode of life, he is prone to become restless, to want to get back to his home or business, and often shows an utter inability to profit by what is being done for him.

If any ideas are expressed by those who are depressed, they lend additional coloring to the original mental picture. This fact has been noticed and referred to by keen observers in all ages, and has led them to differentiate melancholias for purposes of description and classification by the predominating factor. Thus we find delusional and religious melancholia, melancholia with agitation or with stupor, and recently we have added to our classifications such terms as hypochondriacal melancholia, melancholia with ideas of persecution and depressive hallucinosis.

There are without doubt, as far as I have observed, a fair number of depressed conditions which do not fit into any of the regular Kraepelinian groups. In reports from many hospitals such terms as "simple depressions," "undifferentiated depressions," "symp-

tomatic depressions" and "allied to manic-depressive insanity," creep in, even where an attempt has been made to follow Kraepelin's classification most rigidly. Many of these conditions are found in younger persons; the mental status may remain stationary without any dementia. In fact many patients recover and as far as is known remain useful members of society without any future attacks of mental disease of any kind. Many cases of this kind do not become so mentally disturbed as to need hospital care and are not seen by those who are engaged in hospital work.

As previously stated, depressions are a common symptom in the various psychoses. In fact in the papers filled out as required by law before a patient's commitment to the New Jersey State Hospital at Morris Plains is possible, regular practitioners in two-thirds of the cases describe the patient's condition as depressed at the time of their observation.

When we turn to the clinical states associated with depressions we find that, while there may be some so typical as to make it almost impossible for anyone with experience in observing mental diseases to be in error regarding their proper place in any classification, there are others that require all our skill and often constant and repeated observation to enable us to arrive at a diagnosis. The common, I had almost said classical, type of depression, with its psychomotor retardation, dearth of ideas, impediment of thought and lack of ability to carry out resolutions, seen in the depressed states of manic-depressive insanity, we all recognize readily. Also those cases which we see around the time of involution which, while they may be only other forms of the above-mentioned psychosis, are generally considered to be a distinct entity and do not demand more than a brief mention. We also find that depression is quite a common symptom in numerous other mental diseases, as paresis, where it may be found early, simulating neurasthenia, though the accompanying eye symptoms and the condition of the reflexes should place the examining physician on his guard. If confirmed by cyto-diagnosis and the Wassermann reaction, they distinguish the disease in its incipiency and save the physician the embarrassment of an incorrect diagnosis with a too favorable prognosis.

There is frequently a condition of lowered mental tone in the beginning stages of dementia præcox, often before either a cata-

tonic excitement, the expression of paranoidal ideas or the hebetude of the other types render the diagnosis simple.

Another form of which I wish to speak is to me the most interesting type of any cases where depression is a prominent symptom. These cases are a source of worry, a regular thorn in the flesh of anyone who is responsible for their care. The patients show no impairment of volition or thought, but are always slightly depressed and seem possessed with an ever present feeling that they must commit suicide, and this they constantly attempt whenever the slightest opportunity presents. These do not include the hysterical people who *talk* suicide, and occasionally attempt it in an effort to attract attention and gain further care, sympathy or privileges.

I have recently had two patients of the type under consideration, and it is only through careful nursing that tragedies have been averted. The condition in each was of two years' standing, and with no apparent reason and with no ability to offer any explanation, they both continue to try to put an end to their existence, and when expostulated with say that they "must do so." Of course many who suffer from severe depressions are suicidal and are therefore fit persons for commitment to hospitals for the insane where they may recover. However, at times they only learn to suppress their ideas, and cases are on record where such patients have apparently recovered from an attack of depression, and before their return to their former place in the world they have been overcome by a fleeting depressed interval in which they have attempted, sometimes unfortunately with success, to take their lives. Others again wait to commit suicide until a brief interval has elapsed after their discharge from a hospital.

It is, of course, necessary to ascertain positively that the patient is not a victim of any obsession or morbid and irresistible fears. Most of these cases are depressed in as marked a degree as though suffering from melancholia at the time of involution. These cases are, however, more common in younger people around the age of puberty or in women after the birth of their first child.

As an aid to prognosis a uniformly depressed effect, suicidal tendencies and depressions accompanied by ideas of sin or marked agitation all point toward recovery, but if there is senseless behavior without regard to the depressed state, bizarre acts, apathy

or even cheerfulness, which may be present when the patient is stating his ideas of sin and negation, or stereotyped behavior, the prognosis is unfavorable and the presence of dementia præcox should be considered probable.

## Summary.

That depressed states are frequent and range from frequent fits of the "blues" to most pronounced melancholias with agitation.

That depressed states are not necessarily symptoms of insanity *per se.*

That a depression may be the first symptom noted in many psychoses and that throughout many types of insanity a depression may appear.

That we may have mental diseases that will not fit any classification and cannot be pigeon-holed into any of our recognized groups where depression is the principal symptom.

That depressions may be accompanied by various other symptoms.

That suicide may be contemplated or attempted by depressed patients.

# THE PATHOLOGICAL SIGNIFICANCE OF MENTAL SYMPTOMS.

## WERNICKE'S CLASSIFICATION OF SYMPTOMS.

By A. J. ROSANOFF, M. D.,

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It is a matter of common observation that identical mental symptoms or symptom complexes may occur as manifestations of widely different pathological processes. On the other hand, it is equally true that cases of the same pathological processes may present clinically totally different symptom complexes.

To illustrate these facts I will cite brief abstracts from the histories of five cases which occurred at the Kings Park State Hospital:

Case I is that of M. B., who was admitted November 4, 1904, at the age of 63 years. This patient had always been in the habit of drinking moderate quantities of beer with his meals. For some unknown length of time previous to the onset of his mental trouble he had diabetes. About five months previous to his commitment he developed gangrene of the left foot and had his leg amputated a little below the knee. Soon after the operation he began to have visual hallucinations; he saw strange-looking animals under the bed; saw women and devils who spoke to him and threatened to kill him; at night he was restless with fear, would get up out of bed and go out to sit on the stoop; he became greatly depressed; asked the priest to give him permission to kill himself, and was finally committed. On admission he showed normal orientation, good memory, and no evidences of dementia; he was profoundly depressed and apprehensive, owing to visual and auditory hallucinations; he said he saw mice in his room, and he heard voices saying, "You will come to hell, you will come to hell when you kill yourself." They also threatened to kill him. Urine examination showed large amount of glucose; one drop of urine completely reduced one drachm of Haine's copper sulphate solution; specific gravity was 1.040. The patient was put on diabetic diet, received ½ ounce of whiskey every two hours, and large doses of sodium bicarbonate. About four weeks after admission his urine, though of a lower specific gravity, namely, 1.027, still contained glucose, also acetone and diacetic acid; his breath had the odor of acetone. Two months later the glucose had disappeared from his urine and his physical condition showed marked improvement. The visual hallucinations had disappeared. He continued, however, to have auditory hallucinations; he heard voices

from the corridor outside the dormitory calling him vile names and threatening to cut off his other leg. Often he became depressed and lacrymose, begged for protection, and expressed suspicions against the attendants and the other patients as being in the plot against him. He was afraid to go out into the corridor from where the voices seemed to come. Subsequent notes in this case show that the hallucinations, delusions, fear and depression gradually disappeared following the disappearance of sugar and acetone in the urine; the patient soon developed full insight into his condition; in the early part of June he appeared to have recovered fully, but was kept at the hospital on the above-mentioned treatment until August 20, 1905, when he was granted a 30-days' parole at home, at the expiration of which he was discharged.

We have here a case of diabetes in a severe form; following the occurrence of a grave complication and a major surgical procedure, there is a sudden development of visual and auditory hallucinations which gradually disappear upon the institution of diabetic diet.

Case II is that of J. M., a colored man, who was admitted to the hospital May 11, 1907, and who is still there. For over 20 years prior to his commitment he drank heavily and would come home drunk almost every night. His mental trouble came on at the age of 46 years. He began to hear voices which he thought came from upstairs. They called him vile names, repeated his thoughts, and accused his wife of infidelity. He mentioned the matter to his wife, but she paid little attention to his complaints, and simply told him that it was all his imagination, and that it was due to drink. Finally, the voices told him to kill his wife, which he proceeded to do by throwing her downstairs. He was promptly committed. On admission here he was depressed and apprehensive; heard voices constantly; they insulted him, using most indecent language; they kept talking about his wife and told him that she had sexual relations with a neighbor; also that the wife and the neighbor had him sent here to get him out of the way. At the present time his hallucinations are still active. He is called the vilest names; his thoughts are repeated; every act of his is made the subject of comment; much of what the voices tell him is nonsense, and he will not believe it; they tell him, for instance, that he is the owner of the hospital buildings, yet he knows well that these buildings belong to the State. Frequently he requests to be taken upstairs, where he hopes to find the people who are annoying him so much. They often talk to him at night and will not let him go to sleep for a minute. He is firmly convinced that everybody else hears these voices, but will not admit it from motives of prudence.

We are dealing here with a case of hallucinosis very similar to the first case, but occurring upon an entirely different pathological basis, namely, that of chronic alcoholism.

Case III is that of T. C., a clerk, 47 years of age, who had syphilis about 15 years ago. He worked with a large business firm in New York for 28 years, and had worked himself up to a position of considerable responsibility, with a good salary. Several years ago he began to have occasional attacks of vertigo, so that in the street or in the office he would suddenly become unconscious and fall to the floor; after a few seconds he would again regain consciousness. He also suffered from sudden attacks of pain in the thighs and legs. His mental trouble developed about a year ago, when he began to hear voices and thought that the people downstairs in the house where he lived were talking about him; occasionally he was observed stealthily and gradually edging his chair toward the door in order that he might hear more clearly what they said. He thought that the district attorney's men were watching him and following him about, and he became so apprehensive that he began making plans for his protection. It occurred to him that in case of necessity he could use the bread knife, as he had no revolver or fire-arms of any kind, nor any other means of protection. His troubles interfered with his work, he had to give up his position, and was finally committed to Ward's Island. There he continued to hear voices; he heard them say that he was going to be shot and that his head and limbs were to be cut off. At the request of his relatives he was transferred to the Kings Park State Hospital. Since admission he has been constantly annoyed by hallucinations similar to those which he had at home and at Ward's Island. He has no insight into his condition. At times he becomes terribly enraged and exasperated by his annoyances. Physically, he shows absent knee-jerks, unequal and irregular pupils, which do not react to light, very poor balancing power on either leg, Romberg symptom, pronounced tremor of face, tongue and fingers, and speech defect.

We have here a third case which is, clinically, a hallucinosis; pathologically, however, it is altogether unlike either of the first two cases, being clearly a case of general paresis.

Case IV, that of E. K., though pathologically like Case III, one of general paresis, presents clinically the symptom complex of hypomania. This patient is a real estate dealer, 55 years of age, who was admitted to this hospital December 7, 1907. For 12 years previous to the onset of his mental trouble he suffered from locomotor ataxia. The psychosis developed gradually about five months previous to his admission. He became very irritable, talkative and expansive; ultimately he became so troublesome that he had to be committed. On his arrival at the hospital he had to be assisted from the carriage into the ward, owing to a marked unsteadiness in his gait. As soon as he came in he announced that he was going to telephone to Bird S. Coler, two judges and other prominent persons about his case. He was very loquacious; talked constantly in a rapid, excited manner, rambling from one subject to another. It was difficult to obtain his attention, and it was quite impossible to hold it

longer than a few seconds. He answered questions as a rule relevantly, but invariably rambled off on other topics, continued to talk and was checked with difficulty. He was greatly elated, said he was happy because he had purified his mind by joining the Christian Science Church; also said he was expecting to make a great deal of money in a new real estate venture. As he talked he showed a very lively play of facial expression, gesticulated freely, and appeared greatly animated. On the following morning he became very restless, kept trying to get out of his bed, and showed marked irritability, cursing and swearing at the attendants for compelling him to stay in bed. His orientation was unimpaired, memory for both recent and remote events perfectly accurate, and he performed simple arithmetical calculations quickly and correctly.

Case V is also a case of general paresis; it presents clinically, however, a totally different symptom complex, namely, one closely resembling catatonic excitement. The patient, J. O., is a policeman, 41 years of age. At the age of 18 years he had a chancre, which was excised but which was nevertheless followed by secondary manifestations. His psychosis developed suddenly December 15, 1907, when, without any premonition, he became extremely restless and violent, and was at once taken to the Kings County Hospital, where he was placed in restraint. In a few days he seemed to get well and was taken home. January 17, 1908, he again became suddenly violent, began to destroy the furniture in the house, broke an incandescent lamp bulb and tried to cut his throat with the fragments of glass. He was taken to the Long Island College Hospital and from there committed. On admission it was impossible to obtain the full co-operation of the patient in the mental examination; he was restless, tossed about in his bed, disarranged the bed clothes, attempted to remove his clothing, tore the bed sheets up into strings, and tied some of the strings around his ankles. On being placed in a chair before the examining physician he moved about in such a way that his chair slid around on the floor; he crossed and uncrossed his legs, shifted his position constantly; often threw his head way back, turned it from side to side, shut and opened his eyes, rolled his eyeballs, made grimaces, and made peculiar movements with his tongue and lips. Physically, he showed irregular, coarse tremors of the tongue, lips and fingers, slightly exaggerated knee-jerks, speech defect and unequal and irregular pupils, which reacted very sluggishly to light.

These cases show very clearly that it is not always possible to determine the nature of the pathological process from the mental symptom complex; we have to be guided mainly by the history of etiology, history of mode of onset, general medical data, physical examination, and special diagnostic procedures.

In neurological cases we know that the symptoms are dependent not upon the nature of the morbid process but upon its

localization. From the fact that a patient has hemianopsia we may judge that there is a lesion in the occipital lobe, but we can draw no conclusion as to the nature of the lesion.

Cases which form a transitional group between neurological cases and psychiatrical cases, namely, cases of aphasia, seem to indicate that mental symptoms are, like nervous symptoms, dependent upon the localization of the pathological process and not upon its nature.

From what we actually know of the brain and its functions we are led to believe that such a symptom as auditory hallucinations must be due to an affection of a cerebral mechanism which is more or less distinct from that affected in a case presenting such a symptom as cerea flexibilitas.

To Wernicke is due the credit of the first attempt to classify mental symptoms with regard to their localizability.

Our knowledge of brain anatomy offers not even a mere framework for such a study, and it is evident that such a study must begin with a careful analysis of the normal brain functions and of the symptoms in mental disorders.

Most cases of mental disturbance present a mixture of symptoms which suggest a great diffusion of the pathological process; such cases are not well suited for the purpose of such a study. Some cases, however, present, at least during a part of their course, certain isolated symptoms. Cases of this kind justify Wernicke's primary division of mental symptoms into three great groups: Symptoms of psychosensory disturbance, symptoms of intrapsychic disturbance, and symptoms of psychomotor disturbance.

To understand more readily Wernicke's classification of symptoms it may be advisable to consider briefly some of the theoretical data upon which it is based.

The cerebral cortex consists partly of areas which are connected by means of fiber tracts with peripheral sensory and motor organs —*the projection areas*—and partly of areas not thus connected; these latter have been termed collectively *the organ of associations.* Lesions located in the projection areas give rise to disturbances of sensation and of motion, and constitute *nervous diseases.* Lesions located in the organ of associations produce *mental diseases.*

Suppose that in reading a book the reader comes across a word which he has never met with before: the word conveys to him no meaning; he continues to read and soon again meets with the same word: he recognizes it as the same word, but it still conveys no meaning to him; he then learns its meaning from a dictionary, and when he comes across it for the third time he not only identifies it as the same word but it also gives rise in his mind to a definite concept. The act of recognizing the word may be termed *primary identification;* that of associating it with the corresponding concept, *secondary identification.*

We know well that lesions in certain parts of the cortex destroy the memories of words but leave the memories of the corresponding concepts intact, as is the case in most instances of aphasia. The inevitable conclusion from this fact is that memories of concepts are localized in cortical areas different from those in which memories of words are localized. Those portions of the cortex which are the seat of concepts, i. e., of our innumerable memory pictures or representations, Wernicke has termed collectively the *concept center* (*Begriffscentrum*).

If we take the sensory impressions, mental deliberations and movements which are involved in speech as an example of mental activity, we can construct a helpful anatomical diagram in accordance with the above reflections. The sensory speech area may be designated by the letter s; the motor speech area by the letter m; both are connected with the concept center. The activity of the concept center is complex; the simplest process of mental deliberation consists not of a single association, but of a series of associations. The concept center may therefore be designated by the letters AZ—representing the first and last links in the chain of associations.

We can now distinguish in the organ of associations three special mechanisms: 1, *the psychosensory tracts,* from s to A, constituting the receptive mechanism; 2, *the intrapsychic tracts,* from A to Z, constituting the elaborating mechanism; and 3, *the psychomotor tracts,* from Z to m, constituting the emissive mechanism. The entire course sAZm has been termed by Wernicke *the psychical reflex arc.*

Upon this conception of the anatomical foundation of mental

activity is based Wernicke's classification of the symptoms of mental diseases.

As we are dealing throughout with nervous tracts, all the pathological possibilities are exhausted if we assume that each tract may be in a state of diminished, or increased, or perverted nervous irritability. Thus we have:

| Psychosensory. | Intrapsychic. | Psychomotor. |
|---|---|---|
| hypo- or anæsthesia, | hypo- or afunction, | hypo- or akinesis, |
| hyperæsthesia, | hyperfunction, | hyperkinesis, |
| paræsthesia. | parafunction. | parakinesis. |

To illustrate a normal act of the psychical reflex arc we may take as an example an individual who is given a mathematical problem to solve: he hears the problem at s, the sensory projection area, the auditory speech center; he grasps its meaning and conditions between s and A, the psychosensory mechanism; he solves it by deliberations and reflections consisting of a series of associations occurring between A and Z, the elaborating mechanism; and he tells his answer by innervation of m, the motor speech center, the motor projection area.

Symptoms referable to disturbance of the *psychosensory apparatus* need not be dwelt upon, beyond pointing out that in delirious states we often have disorientation, reduced grasp on surroundings, inability to recognize familiar faces, etc., owing to psychosensory anæsthesia; illusions are evidently to be regarded as resulting from psychosensory paræsthesia, and hallucinations as being due to psychosensory hyperæsthesia. In cases of pure hallucinosis we very often have, in addition to the psychosensory disturbances, such symptoms as fear, depression with suicidal tendency, and persecutory delusions, usually well systematized; but it is clear that these symptoms are to be regarded not as direct manifestations of the morbid process, but as secondary phenomena, in themselves perfectly normal under the special circumstances.

Disorders affecting the *intrapsychic mechanism* are much more complex and much more varied. The simplest case is that of intrapsychic hypofunction, which is most clearly exemplified in the depressed form of manic-depressive insanity.

Here permit me to quote Wernicke:

The will to perform any act is, as is well known, the result of a decision; that is to say, it is undoubtedly, at least in part, a pure thinking act by which two or more possibilities are compared and chosen from. It is evident that normally that possibility will easily outweigh all others, which through exercise and habit has acquired the greatest value; thus a normal decision is dependent upon the preservation of normal values of representations. Let us take a simple example: I wake up in the morning; to rise and dress requires the decision to do so; the two possibilities are to rise and to remain in bed; nothing is more natural than, following a life-long habit, to rise and dress; but many matters may influence the decision to rise, for instance, the time: a glance at the clock determines me to remain in bed; or, I have spent a restless night, feel somewhat feverish, and therefore decide to stay in bed. We see, then, that the decision is only correct and rational when a number of series of representations by which it is influenced have their normal values; and it is abnormal when the relative values of the representations are altered as a result of a psychosis. Thus perhaps the hypochondriacal patient does not rise in the morning because, as a result of abnormal bodily sensations brought about by his mental disorder, he believes himself to be bodily ill and too weak to leave his bed.

Aside from coming to a normal decision or to an abnormal one, there may be a difficulty in arriving at any decision at all when the different series of representations, from which a choice is to be made, fail to appear in the field of consciousness, or when they appear but slowly and with difficulty. And this is precisely the condition which, according to our hypothesis, underlies the clinical picture of the depressed form of manic-depressive insanity. We have a state of *intrapsychic hypofunction;* there is no longer in the tract AZ the prompt appearance of two or more series of representations from which the choice is to be made; there is a state of constant indecision and a subjective feeling of insufficiency due to what the patients often term a difficulty in thinking.

In *intrapsychic hyperfunction,* such as is met with in cases of common drunkenness, often in general paresis, but most typically in the manic phases of manic-depressive insanity, the most striking symptom, perhaps, is flight of ideas.

Normal activity of the intrapsychic tracts, the elaborating mechanism, is dependent for its material upon two sources: 1, immediate sensory impressions; and 2, the store of past impressions; the act consists in a series of associations of ideas which

appear in the field of consciousness in a more or less logical order. Furthermore, not all the representations which arise in consciousness are equally relevant and useful in the process of elaboration; and here a more or less conscious and voluntary selection comes into play by which innumerable irrelevant or inconsequential representations, which arise at the occasion of incidental sensory impressions, word-sound associations, etc., are suppressed, while useful and important representations are allowed to survive, so that the main trend of mental activity is preserved in spite of many incidental distracting influences. It is important to emphasize here what we have already had occasion to point out in our discussion of intrapsychic hypofunction, namely, that from amongst a number of representations which appear in consciousness those will survive which have through exercise and habit acquired the greatest value.

Now, in flight of ideas, it is clearly apparent that the process of elaboration differs from the normal process both quantitatively and qualitatively. *Quantitatively,* in that it occurs with undue ease; all sorts of sensory impressions, which normally remain unnoticed, are rapidly taken up and elaborated, and associations of ideas are rapidly and abundantly formed. The *qualitative* difference which exists between this abnormal type of mental activity and the normal consists chiefly in the inability to preserve the main topic of consideration, the principal mental trend, and is dependent upon an abnormal alteration of the values of representations: in the general heightened irritability of the intrapsychic tracts the values of all representations are abnormally increased, and, further, the normal differences in their values are more or less completely obliterated—more or less completely, depending upon the intensity of the pathological process. This *levelling of representations* (*Nivellirung der Vorstellungen*), as Wernicke calls it, gives rise, furthermore, to striking changes in the patient's character; there appears a peculiar equanimity; matters upon which the subject in his normal state feels intensely become in this diseased condition quite equal to other matters which are trivial; the sense of honor in the army officer, the sense of shame in the modest girl, the sense of patriotism in the honest citizen, the sense of compassion in the habitually kind-hearted individual, all disappear in the maniac; the maniac lies, cheats, steals, uses

obscene language, and commits acts of brutality without the least compunction.

Inasmuch as the normal outlet of intrapsychic activity is speech and action, it is not surprising that among the most prominent symptoms of mania are loquaciousness and craving for activity. It must be observed here that all actions of the maniac, no matter how absurd or outlandish, are to be traced to intrapsychic activity, to ideation, just as certainly as all the peculiar actions of the restless subject of delirium tremens are to be traced to psychosensory disturbances; they are essentially in contrast with the movements of the excited catatonic whose restlessness, as will be shown later on, is the result of hyperfunction of the psychomotor mechanism.

The excessive ease with which the maniac says and does things brings about a subjective feeling of ready productiveness and euphoria which contrasts strongly with the subjective feeling of insufficiency and the sadness of intrapsychic hypofunction. This feeling of ready productiveness gives rise in some cases to delusions of power, riches, high offices, etc. Further, the feeling of self-importance coupled with the great pressure of activity causes the characteristic outbursts of impatience, irritability and anger, which are so frequently observed in maniacs.

It must be noted here that instances of pure hypofunction or of hyperfunction are of rather exceptional occurrence, the vast majority of cases presenting all sorts of combinations of phenomena of hypofunction, hyperfunction and parafunction. Thus, instead of there being a general dearth of ideas, or flight of ideas, there may be a flight with greatly limited content—limited either to a few immediate sensory impressions or to one or more simple reminiscences upon which the patient is harping constantly with slight elaborations and variations. Further, a single idea or a set of ideas may acquire undue prominence, "increased value," as Wernicke would say, while of other ideas there may be a dearth; this seems to be most apt to occur in involutional depressions and in cases of arteriosclerosis. In fact the occurrence of a tenacious idea or set of ideas is quite common in both, in states of depression and in states of excitement; this is the case with recurrent delusional states characterized by the appearance of the same delusions with each attack.

It is worthy of note that these tenacious ideas, ideas of abnormally increased value (*ueberwerthigen Ideen*), may appear not only with recurrent attacks, but may be more or less permanently installed and may be unaccompanied by phenomena of depression or of excitement. Such cases constitute a considerable proportion of the chronic paranoic states in the asylums.

We have now to consider disorders of the *psychomotor mechanism.*

It will be remembered that the phenomena of psychomotor disturbance are due to reduced, or increased, or perverted irritability of the psychomotor tracts, and are termed respectively hypokinesis, hyperkinesis and parakinesis.

The most striking group of psychomotor disorders is presented by Kraepelin's catatonic form of dementia præcox. But the same symptom complex may occur in other disease, as is shown by our Case V, which, you will recall, is a case of general paresis.

Let it be borne in mind that all mental activity has only one external manifestation, namely, motion, including, of course, speech. Between the motor organs and the psychosensory and intrapsychic mechanisms is interposed the psychomotor mechanism; it is clear, therefore, that in any case of more or less marked disorder of the psychomotor mechanism a complete analysis of the mental state of the subject presents peculiar difficulties and may be altogether impossible.

In cases of *hypokinesis* all movements of voluntary muscles are more or less completely abolished; the patient remains for days or weeks in one position, staring into space, totally mute, and showing even no play of facial expression; even those movements and attitudes which commonly accompany the stronger emotions are absent. What such a patient sees, hears or thinks about it is impossible to know, for he has lost the ability to externalize his thoughts and impressions by speech, or by facial expression, or by action. And yet in many cases of the most complete akinesis it is possible to establish on recovery that during the period of their illness the patients observed and understood everything that went on about them.

In cases of *hyperkinesis* and of *parakinesis* the difficulty of psychological analysis is, if anything, still greater than in those of hypokinesis. In such cases there is an excess of movement,

but the facial expressions, speech and actions are not the product of psychosensory or intrapsychic activity, as they normally are, but occur spontaneously and independently as a result of psychomotor irritation: they are either altogether outlandish and meaningless—such as grimaces corresponding to no normal facial expression, incoherent speech with senseless neologisms, or various absurd mannerisms—or they are still more misleading in that they may be movement complexes which normally constitute the means of externalizing actual ideas, and which here occur, I repeat, independently of psychosensory or intrapsychic activity, merely as a result of psychomotor irritation. It is in these cases especially that the greatest caution must be exercised in drawing conclusions with regard to the true mental state from what the patient says and does, either spontaneously or in reply to questions. Many a patient is put down as being disoriented, or demented or delusional on the ground of his utterances during an attack of hyperkinesis or parakinesis. Such patients laugh when they do not feel elated; swear, curse and attack those about them when they are not angry; assume a dejected expression, wring their hands, moan and sway back and forth when they experience not the slightest sadness; and give utterance to fairly connected sentences which do not in the least represent what they are thinking about, which are spoken altogether mechanically, and which may be wrongly put down as delusions.

As in the case of intrapsychic disorders, instances of general afunction or hyperfunction of the psychomotor mechanism are rather exceptional; in most cases the disorder is, so to speak, circumscribed, affecting only certain kinds of activity: One patient is constantly jabbering to himself incoherently, is never heard to utter a single intelligible, connected sentence, but is otherwise apparently perfectly normal; he works daily in the shoe shop where he learned the shoemaker's trade, and understands and carries out intelligently all orders that are given to him. Another patient shows a peculiar constant restlessness which renders him practically incapable of doing anything—now he raises his arm in the air for a few minutes, now he turns around on his heel two or three times to each side, now he walks over to the wall and strikes it with the back of his hand; yet when spoken to he will answer relevantly and coherently.

In cases in which the acute phase of the psychosis has passed and in which the residual infirmity is not very great, a considerable degree of compensatory readjustment and reeducation is possible. In these cases we often find a most remarkable distribution of the psychomotor disturbance. We have a patient who always keeps his hands shut and his wrists strongly flexed; he has no contractures or paralyses; he can easily open his hands and extend his wrists, and when he sleeps his hands are in fact held in a natural position; yet he is a good worker and uses his hands in their peculiar position as skillfully as the armless wonder in the circus uses his stumps. We have another patient full of so-called mannerisms; he taps his nose, grunts and belches constantly, spits into his sleeve and mutters to himself; every morning he makes up the beds in a large dormitory; his order of procedure and his manner of working are perfectly stereotyped, he starts in the same corner and ends in the opposite corner; in spite of having to intersperse among his normal movements all sorts of accessory and purposeless movements, he gets through with his work very quickly, having learned to utilize for his mannerisms in a most economical way all the available pauses; this, however, is only a special adjustment; any other kind of work appears to be hard for him; he is awkward, slow, and often cannot be induced to attempt to do anything beyond his accustomed routine duties.

Aside from the three great groups of symptoms which have been discussed there is still another symptom, namely, the symptom of *dementia.* I use this term here in a limited sense, namely, to designate an actual reduction of the total mental content due to destructive lesions. It must be remembered that normally a process of gradual effacement of memory pictures is constantly going on. Some representations are more tenacious than others, either on account of a special intensity of the original impression, or on account of a frequent renewal of the impression through repetition or practice. But pathologically, as a result of senile atrophy, or of arteriosclerotic brain disease, or of chronic alcoholic poisoning, or of the parasyphilitic processes, the nutrition of the brain tissues is interfered with, the functional elements are more or less extensively destroyed, and memory pictures are to a corresponding extent wiped out. The diagnosis of dementia in pro-

nounced cases may often be made without any difficulty. In mild and doubtful cases it may be necessary to make a careful examination, following some scheme which would enable one to determine quantitatively and more or less accurately the patient's mental content, and to compare it with what it was previous to the onset of the illness, or with what one would judge it should be in a normal individual possessing the natural capacity and training approximately equal to that of the patient.

Unfortunately in many cases of dementia the patient, by reason of complicating intrapsychic or psychomotor disturbance, is so incapacitated as to be unable to co-operate in an elaborate quantitative examination of his mental content. In such cases true dementia, if it exists, can be only surmised, but cannot possibly be definitely demonstrated.

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By purely empirical methods Kraepelin has been able to show that certain mental symptoms are of special prognostic significance. Although the certainty of the indications afforded by these symptoms is by no means absolute, yet in the majority of cases Kraepelin's observations hold good and are very helpful. But if it is true that mental symptoms indicate merely the particular cerebral mechanism which is affected and not the nature of the pathological process, that is to say, the distribution and not the kind of lesion, then the way to a real elucidation of the problems of psychiatry lies in another direction.

# TUBERCULIN AS A DIAGNOSTIC AGENT IN THE INSANE, WITH REPORT OF CASES.

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In this paper I propose to review the results of some tuberculin experimentation, particularly with the ocular reaction, which I was led to undertake because of the difficulties in diagnosing tuberculosis among our chronic insane.

Tuberculosis is a prominent factor in the hospitals for the insane. Dr. Pryor of Buffalo in an article gave it as the cause of one-eleventh to one-tenth of all deaths in New York State, but for the years 1904 to 1906 it was the cause in the New York State hospitals of 15½ per cent, and in this hospital for the last two fiscal years has been exceeded as a cause of death by only two things: heart lesions and general paralysis. In heart disease and general paralysis we do not meet the difficulties in diagnosis that we do in tuberculosis, and what is much more important, they do not constitute a menace to the health of those with whom they come in contact.

In tuberculosis, however, there is great menace and much diagnostic difficulty. So often the patients do not co-operate, but even actively resist, so that physical signs are practically unobtainable. The mucous membrane sensibility of the respiratory tract seems to be dulled, many do not cough even with advanced lesions or if cough is present they may swallow the sputum. Others will refuse a sputum cup, expectorate on the floor, in their bedding, etc and to obtain a reliable specimen is impossible. In other cases there may be accompanying lung conditions; we suspect tuberculosis as a basis, but cannot prove it.

An analysis of the cases dying in this hospital during two recent fiscal years showed that there had been 619 deaths, of which a little less than 16 per cent were from tuberculosis. Of these, in 67 per cent depression or marked mental dullness was the fundamental symptom, that is in 67 per cent the mental state

was that in which we would expect to encounter the diagnostic difficulties above mentioned.

Another difficulty is with sputum examinations. Even when we can obtain the sputum, the finding of the bacilli has been, in many cases, for one reason or another, much more often the exception than the rule. Of 55 examinations made since this work was undertaken, bacilli were found only 6 times. I wish to emphasize this point especially. We have a case coughing and expectorating, but for one of the reasons above noted a positive clinical diagnosis is impossible. We do not wish to keep the case on a clean ward, neither do we wish to send it to the tubercular pavilion, with the great chance in a depressed non-active case of their contracting the disease, if they have not already done so. If, however, we have in tuberculin a fairly reliable aid to the diagnosis, it will greatly simplify the solving of these problems.

## Ophthalmic Reaction.

In all I have used the eye test in 127 cases. The tuberculin for this test is prepared by precipitating old tuberculin (Koch) with alcohol, drying the precipitate in vacuum and using this dry powder in one-half to one per cent solution in normal saline.

There are tablets on the market, which are extremely convenient, and I believe absolutely reliable.

I have used the one per cent solution entirely, and although some bad results are being reported, especially in cases where an eye lesion was present at the time of trial, I have had no after effects of any importance, even in some cases with considerable chronic inflammation. One case had a very marked reaction with much swelling lasting about three weeks, but it then cleared up, and at present there is no appreciable difference in the two eyes.

One drop of the solution is instilled into the lower lid at the inner canthus, with the patient preferably in the recumbent position. The lid is held down for a few seconds, and the head turned from side to side to allow the solution to become well distributed. The observations were made at the end of the 12th, 18th, 36th and 60th hour, during which time the patients were not allowed to wash the eye, or to be exposed to sun-light, etc.

Various degrees of reaction are noted:

1st. *Mild or questionable;* with slight reddening of caruncle and adjacent parts.

2d. *Positive;* with well-marked redness of the palpebral conjunctiva and slight mucoid secretion.

3d. *Strongly positive;* with well marked redness of palpebral and ocular conjunctiva, and considerable secretion.

4th. *Very severe;* with deep injection of the entire conjunctiva, œdema of the lids, and profuse secretion.

The clinical significance of these various degrees of reaction does not seem to be as yet definitely established, although it is now being stated that a strongly positive reaction is often of favorable prognostic import.

Many cases were tried a second time in the opposite eye. The opposite eye must always be used in second trials, as the conjunctiva of the first becomes sensitized; and it is also preferable that the second trial be made some little time after the first. In my cases a certain number of discrepancies occurred, but the number was too small to be of any clinical significance.

Because of the many diagnostic difficulties mentioned at the beginning of this paper only 80 of the 127 cases can be used in an analysis, and these may be divided into four groups.

*Group* 1, cases with autopsy.

*Group* 2, proven cases, that is, with tubercle bacilli in the sputum.

*Group* 3, cases clinically tubercular; with practically positive signs, or signs of old lesions, adhesions, etc.

*Group* 4, cases in which there are no signs to be made out, and no reason to suspect tuberculosis.

*Group* 1, of the 10 cases with autopsy:

*Case* 3 was negative on first trial, positive on the second.

Autopsy was made 35 days after first trial and very extensive disease of both lungs found.

*Case* 19 was positive; autopsy 13 days later; advanced disease of both lungs.

*Case* 22, reaction negative; autopsy 9 months later; large scars found in both apices, with many adhesions, especially at base.

*Case* 57, positive; autopsy one and one-half years later; extensive adhesions; healed lesion at left apex and in one mediastinal gland.

*Case* 68, reaction negative; autopsy showed old scars on both apices.

*Case* 69 showed slight reaction; autopsy 3 days later, tubercular pneumonia of entire right lower lobe.

*Case* 74, negative reaction; autopsy 44 days later; no tubercular lesions found.

*Case* 86, very slight reaction at the end of 60 hours; autopsy 2 months later; some apical scars and a small well encapsulated area containing purulent and cheesy looking material.

*Case* 115, slight redness at the end of the 18th hour, and considerable mucopurulent secretion at the end of 36 hours, without, however, any increase in the redness; could only be called a mild or questionable reaction. Autopsy 30 days later showed a very far advanced tubercular peritonitis, with many small pus pockets.

*Case* 122, reaction positive; autopsy five and one-half months later and an extensive active process was found, which was the cause of death.

To sum up there were five cases with advanced disease; of these, three gave slight reactions, one on one trial being negative. They died within a few days of trial and very extensive and active processes were found. This corresponds with the results of others and with the results from the injection method; that is, in advanced cases the reaction is absent or slight. The two others showed positive reactions, but case 19 was not so far advanced as the three mentioned above, and the primary cause of death was Addison's disease. The fifth case lived five and one-half months after the test. Of four cases with scars and evidences of former tuberculosis, two were negative, one showed only a questionable reaction at the end of 60 hours, and one strongly positive, this case showing a distinct healed lesion at apex and encapsulated calcified mass in an enlarged mediastinal gland. This bears out assertions that have been made, viz, that old lesions will give a reaction, but at the same time shows that a negative reaction does not exclude an old lesion. One case with negative autopsy findings did not react. These 10 cases certainly are favorable to the eye test since our experience with other tuberculins would lead

us not to expect a reaction in advanced cases, and in them the diagnosis could seldom be in doubt.

*Group 2.* In the 6 proved cases the reaction was decidedly positive in all except one, in whom the instillation was unsatisfactory because of extreme resistiveness, and even she showed some redness of the caruncle and adjacent structures for more than 36 hours. So far then in the 16 cases where the presence or absence of tuberculosis has been definitely established, the results in the eye test have corresponded with the findings, except in those cases where from logical reasons only a slight reaction or none was to be expected.

We will next take up group 3, the clinically positive, of which there were 36 cases. They may be divided into two classes:

1st. Those with physical signs of old lesions, adhesions, etc., including four cases with healed joint and glandular involvement of probably tubercular nature. 2d. Those with suspicious or distinct signs of a recent or active process.

The first class included 17 cases, of whom 15 were positive, 1 negative and 1 questionable. This again bears out the statement that healed and nonactive lesions will give a reaction and is an important point because of its bearing on the conclusions we can draw from positive reactions.

The second class includes 19 cases, of whom 17 were positive, 1 negative and I questionable, and these 2 last present signs which might be explained on the ground of chronic bronchitis and emphysema.

Taking the two classes together then, of 36 cases in whom tuberculosis is now or has been in all probability present, 32 or 88 per cent gave a positive reaction.

So far the results have all been in favor of the reliability of the test, but when we come to consider group 4, 28 cases in whom no physical signs of any sort could be made out, we meet with some difficulties; of these 22 were negative and 6 positive; that is, 21 per cent were positive. As I have eliminated all who would not co-operate in an examination, this 21 per cent represents cases in whom there is absolutely no reason to suspect tuberculosis. In view of the findings with the cases showing old lesions, adhesions, etc., one is tempted to explain these positive reactions by the assumption of an undiscoverable non-active focus, but from the

autopsy cases and the two mentioned under group 3 we have seen that an old focus does not necessarily give a reaction and one cannot but feel that there may be cases in which a positive reaction may occur without any focus being present. No cases have as yet come to autopsy to sustain this possibility, but until more have been examined post-mortem, one cannot eliminate it as a possible source of error. This group and the one preceding bring up, however, the much more important, perhaps the most important, point of the whole subject; namely, that while a negative reaction may be a strong point against tuberculosis, a positive reaction gives us very little clue to the activity of the lesion, and in a given case the reaction obtained may not be caused by the process whose signs have excited our suspicion, but by an old focus, perhaps even in some other part of the body.

### Injection Method.

In this method we use crude tuberculin, and in my cases I have used it in series of one-half, two, and five milligrams at suitable intervals. Many give 10 milligrams as the final dose, but it has seemed to me that five is sufficient. This method is old, and its usefulness within certain limits is an established fact, but its range of practicability among the insane is decidedly more limited than the eye test. I, however, injected 38 of my cases, the object being chiefly to check up the eye test by the older method. Most of these cases were those in whom there was much doubt as to the diagnosis, resistive, non-co-operative cases, etc., and are therefore hardly applicable for analysis, but from a comparative viewpoint, rather valuable information was obtained. In the 38 cases there were only 6 discrepancies, or a little less than 16 per cent. Among them were two with eyes slightly inflamed, which renders the eye test unreliable. Others were much demented, could not be controlled, would rub at the eye after instillation, etc. In each case a fairly logical reason could be given for the discrepancy, but in the absence of autopsy and certain knowledge of the lung condition, I do not care to draw too definite conclusions. I do think, however, that the results correspond as closely as one could expect in the class of cases with which we deal and that 16 or less per cent of error is no more than one might look for in

tests of this character. It is also to be noted that no discrepancies occurred in the clearly tubercular cases which were injected.

## Other Reactions.

The cutaneous reaction of Von Pirquet is obtained by the use of a solution of old tuberculin used in much the same way as in ordinary vaccination. It is said to be quite reliable in infants and young children, but entirely unreliable in adults. I have not tried it and it does not seem that there is any indication for its use among the insane. The use of the nasal mucous membrane has lately been recommended, but it involves co-operation by the patient and so is not feasible for the class of cases with which this paper deals.

## Conclusions.

Under this heading I will limit myself to the eye test, and a few points drawn from other papers on this subject.

Dr. Baldwin[1] of Saranac, reported 137 cases. Of the 45 proved cases only two failed to react; and one of these was a case of miliary tuberculosis; the other had had a therapeutic course of tuberculin. Of the nine healed cases (one of 17 years' duration) all except the one of 17 years reacted, and even that one showed slight redness. Of 26 suspected cases 14 failed to react. Of 57 apparently healthy persons 16 reacted, but eight gave a family history of tuberculosis and six of exposure and close contact. I am inclined to doubt if exposure is enough to explain a positive reaction, for a number of my negative cases were patients on the tubercular ward or workers there. Taking his figures as given he has 28 per cent of positive reactions in apparently healthy adults. Among my cases there were 21 per cent positive in this class.

Smithies and Walker[2] report among 242 individuals, a series of 76 apparently normal persons, not hospital patients. Seventy-four of these were negative and two positive, but it was later found that one of the positive had had a tubercular knee, and the other presented physical signs which were strongly suspicious. So that they practically report a series of 74 normal individuals with no reactions.

[1] Journal American Medical Association, December 14, 1907.
[2] Ibid., January 25, 1908.

An editorial in the *Medical Record* of April 25, 1908, entitled: "The limitations of the newer tuberculin reactions" quotes from a number of observers and gives the most divergent results. It gives Von Pirquet as finding 90 per cent of positive reactions in adults to both the skin and ophthalmic tests; a finding for the latter as extreme, it seems to me as some of the early reports of the French experimenters, who found no reaction in apparently healthy individuals, and the report of Smithies and Walker above mentioned.

Others gave 2½[3] to 31[4] and even 51 per cent[5] of positive reactions in cases clinically non-tubercular, although this latter high finding was among 31 cases of other illnesses, so it would seem that my findings of 21 per cent positive in this class is about the average, and about the limit of error one must expect, at least in the insane.

The subject may, I think, be summed up in this way. About 20 to 25 per cent of cases will react in whom no demonstrable lesion can be found, but the possibility is very great that in the majority an old focus would be found post-mortem. Therefore a positive reaction in the absence of clinical signs is of no significance, but a negative reaction except in advanced cases, to my mind, practically excludes tuberculosis. A positive reaction in the presence of suspicious signs or symptoms is enough to justify the isolation of the case, and its treatment as one of tuberculosis. It ranks practically the same in reliability as the injection method, and can be used on resistive or excited cases and in the presence of temperature; the former condition rendering the injection method impractical, the presence of temperature of course excluding it absolutely. It is also easy of application and consumes little time, the injections requiring from nine to 12 days, during which time the patient must be in bed. I would, therefore, say that the ophthalmic test is a very great aid in diagnosis, especially in institution work, but it is only an aid. The use of both the injection and eye methods gives more certain results, but is, as I have just pointed out, often impossible.

[3] F. Levy: Deutsche medizinische Wochenschrift, January 16, 1908.
[4] P. Eisen: Beitrage zur Klinik der Tuberculose, Vol. VIII, No. 4.
[5] A. Plenn: Deutsche medizinische Wochenschrift, February 20, 1908.

I may here perhaps quote a few cases showing its practical application in this hospital.

CASE 1.—Sarah P.; because of mental condition no physical examination could be made; coughed, but did not expectorate; symptoms and temperature suggestive. Died about one month after tuberculosis was first suspected. Autopsy not permitted. In this case reaction was positive, and with the symptoms was enough to justify her transfer to the tubercular ward.

CASE 2.—Kate S.; very resistive; keeps head covered; respiratory murmur practically inaudible; has lost flesh rapidly of late; coughs and expectorates on the floor or blankets. Reaction positive. This is a dangerous case because of her filthy habits. Tuberculosis could only be surmised from the symptoms, but the positive reaction, to my mind, settles the diagnosis.[6]

CASE 3.—Ella S.; an old woman with much expectoration. Physical examination very unsatisfactory. Negative to eye test and to injection up to five milligrams. In spite of the copious expectoration, the negative reactions led us to transfer her to the hospital ward.

CASE 4.—Kate K.; a very disturbed, resistive case; yelling, screaming and struggling at any attempt at examination. Thin for years. For about a year, cough and some expectoration, with which she was very filthy. Eye test practically negative. She would, on the tubercular ward, be a very disturbing element, and the absence of anything which might be called a reaction justified us, I think, in keeping her where she is.

(NOTE.—A year later is remaining in same nutritional state. No further proof of tuberculosis; still kept on disturbed ward.)

CASE 5.—Mary M.; lung signs might be explained on the ground of chronic bronchitis and emphysema. Nutrition, etc., have changed little in two or three years. Very copious expectoration, four examinations of which have been negative. Gave, however, a slight but protracted reaction to the eye test, and a temperature rise to 102° after five milligrams injection. This, in my opinion, justifies her being kept on the tubercular ward, and the regarding of her expectoration as dangerous.

Only a few words of caution are perhaps necessary. In inflamed eyes the resulting reaction is not as reliable as in a clear conjunctiva, and there is from the reports of others considerable danger of its aggravating the existing condition, although I have so far escaped any serious after effects. After an eye test the conjunctiva remains sensitized for some time, and if injections are

[6] Died since this paper was written, and extensive active lesions found post-mortem.

now given the eye will become red. Injections also apparently sensitize the conjunctiva, and any results obtained by a following instillation are of no value, so should the use of both methods be contemplated the eye test must be made first.

# THE PREVALENCE OF PELLAGRA IN THE UNITED STATES.

## A Statistical and Geographical Note with American Bibliography.

By C. H. LAVINDER, M. D.,

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Forty-five years ago two cases of probable pellagra with mental symptoms were reported by Dr. Gray, of Utica, N. Y., and Dr. Tyler, of Somerville, Mass., at the annual meeting of the Association of Medical Superintendents of American Institutions for the Insane, held in Washington, D. C. Exclusive of one case reported by Dr. S. Sherwell, of Brooklyn, N. Y., in 1883, and one each by Dr. Sherwell and by Dr. H. F. Harris, of Atlanta, in 1902, the disease has till recently—1906-7—either disappeared or has been overlooked, or, what is more likely the physician when first studying one of these puzzling cases and inclining to the diagnosis of pellagra has accepted too readily the assertion of all authorities that pellagra does not exist in the United States, and has, therefore, given another and commoner name to his case (see final note), although his professional conscience may never have been satisfied. There seems, however, to be no doubt that some physicians did recognize the disease, for one H. E. McConnell, of Chester, S. C., who termed it pellagra in 1903, although unfortunately he did not publish his observations. According to E. J. Wood, of Wilmington, N. C., R. H. Bellamy, of Wilmington, and J. B. Wright, of Lincolnton, were the first to recognize the disease in North Carolina prior to 1907, but again unfortunately they did not publish their observations.

In spite of authoritative denial of the existence of pellagra in our country, a number of cases of the disease was recognized and

reported independently in 1907 by medical officers of Alabama and South Carolina asylums. In April, 1908, one of the writers (C. H. L.), stationed at Wilmington, N. C., reported to the U. S. P. H. & M.-H. Service that several cases of pellagra had recently been observed in that city. From that time Surgeon-General Walter Wyman has shown the most active interest in the study of pellagra both personally and officially. In his report for 1908, Dr. Wyman says: "These reports indicate that the disease is more prevalent than has been supposed and that it may in future assume importance from public health and economic standpoints. . . . .

"Whether this disease in the Southern States be true pellagra or not has so far proven itself a factor to be reckoned with and it should receive most careful study."

In the summer of 1908 the disease was identified with Italian pellagra by two South Carolina physicians, Dr. J. J. Watson and one of the present writers (J. W. B.), who visited Italy for the purpose of studying the disease. Following these observations and publications, pellagra has been recognized in many different localities, such as Wilmington, Morganton and Charlotte, N. C., Augusta, Milledgeville and Atlanta, Ga., and many places in South Carolina as well as in other States. For the last year and a half, the South Carolina State Board of Health has been actively investigating the pellagra problem, by special inquiry, conference and finally by original research with the cooperation of Surgeon-General Wyman, of the U. S. Public Health and Marine-Hospital Service, who assigned (May, 1909) one of the present writers (C. H. L.) to duty at Columbia and vicinity for this purpose.

Recently a letter of inquiry (see below) about pellagra was addressed by another of the present writers (C. F. W.) to the superintendents of State hospitals for the insane in the United States, and the following table embodies their replies:

To 164 inquiries 120 replies were received, about 20 being in the affirmative.

New York: Number of cases, few (near Brooklyn).

Pennsylvania (Dixmont): Number of cases, 1; recognized, 1909 (Hungarian).

Maryland: Number of cases, 1 or 2; recognized 1909; probably existed since 1905; male, 1; female, 1.

Virginia (Staunton): Number of cases, 1 (?); recognized 1908.

Virginia (Petersburg): Number of cases, 1 (?).

North Carolina (State Hospital, Raleigh): Number of cases, several; recognized 2 or 3 years; probably existed 10 years.

North Carolina (State Hospital, Goldsboro): Number of cases, 8; recognized 1908; probably existed 10 years; female, 8.

North Carolina (Dr. Taylor, Morganton): Number of cases, 8; probably existed 22 years.

North Carolina (State Hospital, Morganton): Number of cases, 20; probably existed 5 years.

North Carolina (Dr. Wood, Wilmington): Number of cases, 75 in State since 1905, and 43 were females and 15 were white.

North Carolina (Dr. Nisbet, Charlotte): Number of cases, 18; whites, 16; negroes, 2.

South Carolina (State Hospital, Columbia): Number of cases, 125; recognized 1907; probably existed 25 or 30 years; male, 25 per cent; female, 75 per cent.

South Carolina (Dr. Corbett, Greenville): Number of cases, 3.

South Carolina (Dr. McConnell, Chester): Number of cases, 13.

South Carolina (Dr. Neuffer, Abbeville): Number of cases, 9.

South Carolina (Drs. Neil and Epting, Greenwood).

South Carolina (Dr. Robt. Wilson, Jr., Charleston; Roper Hospital): Number of cases, 15—11 colored; 4 white—9 females; 6 males. Conservative estimate of number in city in past year, 30.

South Carolina (Dr. Williams, Columbia): Number of cases, 500 estimated in State.

Georgia (State Sanitarium, Milledgeville): Number of cases, 225; recognized 1907; probably existed about 25 years; male, 25 per cent; female, 75 per cent.

Georgia (Grady Hospital, Atlanta): Number of cases, 10; recognized 1907.

Georgia (Dr. Moore, Augusta).

Florida (State Hospital, Chattachoochee): Number of cases, 12; recognized 1907; probably existed 4 years—male, 5; female, 7.

Alabama (Bryce Hospital, Tuscaloosa): Number of cases, 25.

Alabama (State Hospital, Mount Vernon): Number of cases, 160, and 2 private; recognized 1906, probably existed since 1906; male, small number; female, large number.

Alabama (Dr. G. H. Searcy, Tuscaloosa): Estimated number of cases in State, 150 to 200.

Mississippi (State Hospital, Jackson): Number of cases, 1; others in the State.

Mississippi (State Hospital, Meridian): Number of cases, 2; recognized, 1907 (?); male, 1; female, 1.

Mississippi (Dr. Sara Allen Castle, Meridian): Number of cases, 10.

Louisiana (State Hospital, Pineville): Number of cases, 3. Dr. Thomas, Supt., (July 28, '09), expresses the belief that this disease is as common in Louisiana as it is in the Carolinas.

Tennessee (Baptist Orphans Home, Nashville): Number of cases, 11. Other cases in the State.

Kansas (State Hospital, Topeka): Number of cases, 6 (?); probably existed 15 years—male, 3; female, 3.

Kansas (Epileptic Colony Parsons): Number of cases, 1.

Illinois: Since this report was first made, one of the writers (C. H. L.) has (July 19, '09) identified 3 cases of pellagra at the Cook County Asylum at Dunning, Ill. In the last year or year and a half six other fatal cases have been under care there.

Illinois (State Hospital, Peoria, Aug., 1909): Over 40 cases.

Massachusetts (St. Vincent's Hospital, Winchendon): Number of cases, 1, Aug. 15, '09.

This table seems to show that there are records of at least 1000 cases of pellagra scattered in 16 States. More than half of these have been reported from asylums or similar institutions. Sporadic or suspected cases have also been reported from Texas and Arkansas as well as from New York and Virginia.

Dr. E. J. Wood, of Wilmington, N. C., has records of 300 cases in the South, 70 of which occurred in North Carolina. It has been estimated that many hundred cases exist in Georgia, and Dr. Walker, of the State Sanitarium, Milledgeville, says that 2 per cent of admissions in 1908 had pellagra.

One of the present writers (C. H. L.) has reported to the Surgeon-General of his service a conservative estimate of 1500 cases in the Southern States since 1906. To show how conservative this estimate is it should be recalled that if 500 cases have been observed in asylums in the last two or three years; then upon the estimate made by the Italians that only ten per cent became insane the total number of cases would be nearer 5000 than 1500.

The asylum officers in Maryland have not observed cases, but Dr. W. S. Thayer, of the Johns Hopkins Hospital, has recently recognized and reported a case of the disease in Baltimore, and is satisfied that he observed a similar case several years ago (1905).

Nor does the disease seem to have appeared in the Tennessee hospitals for the insane, but 11 cases of pellagra have been reported as occurring in the Baptist Orphans' Home at Nashville.

Dr. Dewing, of the Long Island State Hospital, Flatbush, Brooklyn, N. Y., reports that he has had no cases of pellagra in his hospital, but "a few cases apparently from other sections of the country" have been observed in his vicinity.

One of us (C. H. L.) observed in New York, in 1908, a case of the disease in a white American seaman in the coastwise service.

Although not within the boundaries of the United States, it deserves passing note that Dr. B. K. Ashford has reported (*N. Y. Med. Jour.*, June, 278-08, page 1239) the observation of one case in Porto Rico, and Dr. J. A. Hayne has observed two cases on the Panama Canal Zone.

While absolute accuracy is not claimed for these statistics, they may be regarded as a fair indication of the extent and distribution of pellagra, as now recognized in our country, and their presentation at this time is made for the purpose of emphasizing the growing importance of the pellagra problem in the United States.

The following interrogations were used by one of the present writers (C. F. W.) in gathering statistics of pellagra:

1. Have you seen any cases of pellagra in your institution or in your State? .....
2. How many cases have you seen? .....
3. How long since you recognized the disease? .....
4. If at all, how long do you think the disease has existed in your section? .....
5. What proportion were male? ..... female? .....
6. What was the occupation of those affected? .....
   Nationality? .....
7. Do the products of Indian corn (hominy or meal) form a part of the dietary of the patients, and are these products derived from native or shipped corn? .....
8. Were your patients from the poor .....; moderate .....; or well-to-do classes ....., and were they from the city .....; town .....; or country .....

..... M. D.
Supt.....
State of.....

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NOTE.—There seems little doubt that the condition now recognized as pellagra has existed in the Southern States for many years—25 or 30 at least—and has been regarded as an unusual manifestation of tuberculosis, syphilis, malaria, acute delirium, hook-worms, dermatitis exfoliativa, eczema, etc. Careful search through medical literature may disclose the fact that cases of pellagra have been reported under these or other diagnoses.

## DISCUSSION.

Dr. H. M. Hurd.—I thought the importance of this subject was such that we ought to have a full meeting; consequently I moved for the postponement of the discussion until this morning, when I thought perhaps we might have more open minds than we had last night.

It seems to me that this question of pellagra is one of the most important that has ever come before the Association. I am morally sure that cases have been in existence a long time which have not been recognized, and it would seem to me that Dr. Babcock should supplement his paper with an account of its clinical symptoms so that all may be on the lookout for it.

Two or three weeks ago a member of the Johns Hopkins Hospital staff went to Columbia, South Carolina, to see cases there under the guidance of Dr. Babcock. He came home and within two days an interesting case of pellagra was developed in the hospital dispensary service. A man who had care of horses and much to do with corn had developed the disease. He was admitted to the ward and the hope was entertained that he would remain for treatment, but he did not. I am sure that in our foreign population, among people who live poorly, on damaged food and under unsanitary conditions, this disease will be found to exist. As I said before, I hope we may have from Dr. Babcock some account of the clinical symptoms with the possibilities of treatment.

Dr. Langdon.—I did not have the pleasure of hearing all of Dr. Babcock's paper and I simply rise to ask if he included any study of the etiology, especially with relation to a specific cause. Some years ago (about 1903) an Italian investigator, Ceni by name, published a paper reporting a series of investigations in which he claimed to trace the disease to infection by one of the mould fungi, a well-known aspergillus of which there are two species, known to inhabit the human external ear. He had conducted an elaborate series of investigations and thought this peculiar mould, its ingestion in mouldy grain and meal gave rise to the symptoms of pellagra, the obvious conclusion being that it was entirely a preventable disease. All we needed to do was to thoroughly sterilize the meal, flour, bread, etc., and stamp out the disease. I do not know whether there was any allusion in the paper to that cause or not, but anything in the way of a specific cause is absolutely ignored by some writers who evidently had not come across Ceni's observations. I would like information on the subject myself.

I would also say that as already noted, the disease is not so very uncommon. Only last week at the meeting of the American Neurological Association one of the papers on the program reported ten or twelve cases in private practice. It is an exceedingly practical subject in a country that produces and consumes as much corn as ours.

Dr. Babcock.—Mr. President, I think Dr. Perry, of Kansas, is familiar with this subject. Before I have anything to say, I would be glad to hear from him.

Dr. Perry.—I would say that this disease is much more prevalent than it is generally thought to be. I remember that during a service of four years beginning in 1899 on the staff of the Georgia State Hospital, at Milledgeville, there were a number of cases of this disease in the institution. I had some in my own service, but as the condition was entirely new to us, none of these cases were recognized as pellagra. They were diagnosed as cases of eczema, dermatitis, etc., and the assigned cause of death in those patients dying of this disease was usually exhaustion. Last year I had occasion to make a short visit to that institution and while there I saw some twelve or fifteen patients with this disease. Some of the unrecognized cases referred to were in the institution as early as 1899. I was informed that the disease has appeared much more frequently among their patients in the last few years and is considered one of the most serious conditions they have to treat. On my return to Kansas after seeing these patients I found that we had one quite typical case in the State Hospital for Epileptics, at Parsons. This patient, a woman of past middle age, who had been in the State institutions of Kansas for many years, developed the very characteristic group of symptoms, including diarrhœa, depression, fungus-like condition about the nose and mouth, brown and indurated eruption on the hands and increased reflexes. After a continued illness of several months' duration this patient died.

Dr. Hurd spoke of the possibility of a large number of these cases developing in our foreign population and in those who do not live in a hygienic manner. I think he will find that a certain number of these cases develop among the better class of people. I would like Dr. Babcock to give us his experience along that line. I remember one of these cases in my service at Milledgeville, in a young woman, from a good family, who developed a typical case that ran the usual course and ended in death. This patient had lived in the usual hygienic surroundings of the better class of country people and had been using what was supposed to be a good, average grade of foodstuffs. I was very much interested in this subject at the time of my visit to Milledgeville last year and from the number of patients whom I saw there I believe that if a careful search is made for evidence of this disease it would be found quite prevalent in some sections. The fact that many cases are being reported from Georgia and other Southern States and that I have seen one case develop in Kansas, shows that it is quite widespread in its occurrence. I regret very much that there are not more members here from the southern institutions, as the disease is quite prevalent down South.

Dr. Babcock.—The experiments of Ceni and Besta are well known to students of pellagra, their conclusion being that *penicillium glaucum,* as well as *aspergillus fumigatus* and *aspergillus florescens,* both of which are ordinarily innocent, when occurring on damaged corn, produce a toxin which causes pellagra. These investigators have been working on this subject for a good many years and perhaps 80 per cent of Italian pellagrolo-

gists accept the maize theory. Lombroso has fathered this theory since back in the sixties.

There is another school of Italians in regard to the cause of pellagra which associate it with the bacteria and this idea of the causation of the disease has been lately brought out by Tizzoni, so that the Italians are divided into two camps, the zeists and the anti-zeists.

So far Americans who have studied this subject do not feel that we can take any pronounced stand in regard to causes. We all feel that we are as yet very ignorant of the whole subject, and certainly no one of us wishes to take the position of being dogmatic. We simply realize that we have had a condition a number of years and that we have not fully understood it, and we do not claim that we understand it now.

In many respects the disease as found in South Carolina is absolutely identical with cases which I saw last summer in Italy and which the Italians call pellagra, but the mortality of what we have been inclined to call acute pellagra is overwhelming. Dr. Searcy and Dr. McCafferty, at the Mount Vernon Hospital for Colored Insane, in Alabama, reported an epidemic of acute pellagra in which the mortality was over 63 per cent. A few days ago I had a report from a superintendent of another hospital in the South stating that out of ten cases eight had died. I have had cases come in with well-marked symptoms of pellagra and die within three weeks. These cases we call acute pellagra, but careful inquiry into the history would show that the patients who developed the acute mental symptoms for which they were sent to the asylum have had the physical symptoms for some time and that what appear to be acute symptoms are simply an exacerbation which precedes the mental disease.

Dr. I. M. Taylor, of Morganton, N. C., has written me that several years ago a patient was brought to his hospital in a state of collapse and in less than a week she died in a convulsion; that he had never been satisfied with the diagnosis in the case; but no history of any other convulsions was given. The other day he met the family physician and in going carefully over the history he found she had been a typical pellagrin. She had had dermatitis and diarrhœa; and the mental symptoms of acute delirium which caused her to be sent to a sanitarium were the final development of a chronic condition.

Briefly the symptomology is usually of a chronic digestive disturbance, a so-called nervous dyspepsia, in the early stages constipation, and latterly an exhaustive diarrhœa. A rather constant symptom is pain on pressure in the mid-dorsal region; in the early stages the knee-jerk is brisk and in the final stage it is obliterated. One of the most interesting phases of the disease is the light that is thrown on the cases of exhaustive diarrhœa from time to time occurring in asylums. These are cases to which Lombroso has given a great deal of attention and which he calls *pellagra sine pellagra.* The patient has no dermatitis and has perhaps twenty-five or thirty liquid stools, which are not amenable to treatment at all and which lead to the final exhaustion with high temperature.

In passing I would like to say that the students in the London School of Tropical Medicine are always warned that they must make the diagnosis of pellagra regardless of the presence or absence of dermatitis.

We had a very interesting conference in South Carolina last October upon this subject and if any of the members of the Association are specially interested in it they can obtain an account of that conference containing about fifteen papers in which various phases of pellagra are discussed. The proceedings of this conference may be obtained from the Secretary of the State Board of Health, Columbia, South Carolina.

# SCARLET FEVER AS AN ETIOLOGICAL FACTOR IN THE PSYCHOSES.

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A glance at the evolution of psychiatry is sufficient to impress one with the fact that etiology has held a prominent place with psychologists from the mythical era to the present time. It is also noticeable that at different periods, different causes were considered sufficient to produce a psychosis. Certain forms of insanity have come down through the ages unchanged, but etiology has oscillated from the heavens to its antipodes. With this oscillation of the real or supposed cause, care and treatment has followed in a most natural order of sequence. When the aberrations were attributed to the smile of the gods, the favored one was looked upon as supernatural and venerated. When possessed of the devil, praying, singing of hymns, violent exorcisms and magical formulæ prevailed. Only when the etiology came within the confines of physical causes and human reason can we discern any real progress. It is said that Galen, the last of the great ones of the golden age, who wrote at the beginning of the third century, did credit to a twentieth century text-book. During the dark ages which followed, the science of medicine degenerated into an elaborate system of empiricism and mysticism, and demonology was reinstated as a controlling element in life. "The world seemed to be like a large mad-house for witches and devils to play their antics in."

We foster the modern view: a human being sick; physical causes; a hospital, light, airy, clean and comfortable; suitable and abundant nourishment, trained nurses, kindness, non-restraint, reason, liberty. But let us not be deluded. "The cost of giving the treatment has been materially increased, the recovery rate remains unchanged" (Bancroft).

The scientific study and treatment of the insane has met with signal achievement, but the results are far from gratifying.

The ever increasing percentage of insanity tends to turn our attention to that genius, Dr. Pliny Earle, of 30 years ago, who said, "Very clearly, if insanity is to be diminished it must be by prevention and not by cure." The old adage is also quite appropriate: "He who cures a disease may be the skilfullest, but he who prevents it is the safest physician." As *etiology necessarily precedes prophylaxis,* so a careful study of each *known* and *probable* cause seems worthy of consideration.

Where scarlet fever originated is not known; descriptions are given of it by medical writers before the Christian era. To Sydenham we owe the name and its differentiation from measles. It is very generally disseminated, it has been studied in all parts of the civilized world. No race is immune. Whether it is due to the streptococcus scarlatinæ of Klein and Gordon, or the streptococcus conglomeratus of Kurth, or an organism resembling the meningococcus as isolated by Wadsworth, has not been determined. Mallory would seem to demonstrate that the cause of the disease is probably a protozoön. Age does not confer immunity; susceptibility, however, is in inverse ratio to the age, the greatest incidence being from four to eight years of age.

Hospital care of scarlet fever cases has greatly reduced both morbidity and mortality, 23.48 and 1.56 respectively, per ten thousand population, in the Boston City Hospital. The mortality for the State of New Jersey during the past five years is given as 2.49 per ten thousand. The percentage of mortality varies, with age and epidemics, from 33 per cent to 1.33 per cent. The death rate in the Municipal Hospital of Philadelphia in 5213 cases was 9.72 per cent.

Although the mortality and morbidity has been considerably reduced, yet with hospital care and modern treatment, complications and sequelæ that may lead to permanent physical or mental impairment continues very high, estimated at over 90 per cent in some epidemics. Albuminuria accompanies nearly all cases of severe scarlet fever, often with interstitial changes especially marked. McCullom finds a mitral systolic murmur in 187 of 1000 cases analyzed. Otitis varies from 10 to 75 per cent. This in turn has been the direct cause of 10 per cent of deaf-mutism in the State of New York, in Great Britain 23.5 per cent.

The nervous system also receives no little portion of the damage

done by this disease. Convulsions are not infrequent at the onset of the disease in children, which indicates a sudden and severe disturbance of the physical equilibrium, or they may occur late as a result of uremia. It may be well to state in this connection that in many cases of epilepsy the initial convulsion occurred at the time of an attack of scarlet fever. Weildermuth reports 12 cases in a series of 187.

"More cases of epilepsy are consecutive to scarlet fever (apart from the influence of nephritis) than all the other acute diseases put together." "This together with the fact that optic neuritis may follow scarlet fever, without any organic change in the brain to cause it, seems to show that the scarlet fever poison has a special action on the nervous system" (Gowers).

The writer has found, in a series of 122 cases of epilepsy, 11 (more than 9 per cent) with a history of scarlet fever, the initial convulsion occurring at the time of the disease or as a result of some complication or sequelæ. Other factors, however, such as heredity, alcoholism and imbecility, were not excluded.

Meningitis, paralysis, embolism, hemiplegia and chorea have also been reported during the past year.

In regard to the relation of scarlet fever to the psychoses: The author has reviewed the literature at his disposal, but has failed to find much that treats it specifically, and no statistics bearing upon the subject except in an indirect way. It is also difficult to handle the information that has been gathered in a manner that would benefit those not already familiar with the subject. At the present time it shall be the attempt of this paper to bring together only such isolated facts as seem worthy of consideration; and if, by so doing, I assist anyone in any manner or shall have offered a suggestion that will lead toward the establishing of scarlet fever in its proper place as an etiological factor in the psychoses, then compensation will have been sufficient.

The question might well be raised here. Does the specific poison (or organism) of scarlet fever have a predilection for the nervous system, or, are its toxins more apt to affect the nervous system than the toxins of any other acute infectious disease?

To the first part of the above question with the light of modern research no definite answer can be given. Some would lead us to the view that scarlet fever poison has a special action upon the

nervous system, while others prefer to explain its attack upon an anatomical basis—continuity and contiguity of tissue. The former view seems to receive some support by the fact that optic neuritis may follow scarlet fever without any organic changes in the brain to cause it.

To the latter part of the above question there is also some ground for discussion. For those who would oppose the view that the specific poison (or organism) of scarlet fever has no predilection for the nervous system, there must be some explanation of its effects other than anatomical relations, especially in those cases in which no complications were recognized, the patient, apparently, not having had a severe attack. It is not uncommon to get a history of an ordinary attack of scarlet fever followed by a change in disposition, defective memory or arrested development. Furthermore it has been observed that more cases of nervous disease are consecutive to scarlet fever than all the other acute infectious diseases put together.

In dealing with the psychoses alone, it seems most natural to place them in two groups. First, those in which scarlet fever is a *direct* cause; and second, those in which it is an *indirect* cause.

In the first group are placed such forms as manic-depressive insanity, fever delirium, post-febrile psychoses, exhaustive psychoses and dementia præcox.

The first form is passed briefly as it occurs but rarely. The second form does not differ essentially from the fever delirium caused by the toxins of other acute infectious diseases. It follows rather closely the clinical course of the fever, and in a measure depends upon it. The clinical picture presents four different grades corresponding to the intensity of the toxic action upon the cortical neurons, varying from moderate irritation to paralysis and finally to complete destruction of the same. This form of psychosis is of short duration and in favorable cases subsides with the temperature. A few cases emerge from the fever delirium into an exhaustion psychosis or become the starting-point of other psychoses.

The third form of mental derangement in which scarlet fever is recognized as a direct cause is that known as post-febrile psychosis. This, as its name indicates, is found usually following the fever and is apt to lead to permanent mental impairment. Because of

this tendency some of its symptoms deserve mention. The mildest form is represented by those cases in which, after the subsidence of the fever, the patients fail to show their former physical and mental energy, they are dull and sluggish, very susceptible to fatigue; they cannot collect their thoughts and find it difficult to occupy themselves; are indifferent to their surroundings and let things go as they will. In emotional attitude they are sad and troubled, sometimes irritable, and occasionally at night they suddenly develop a state of great anxiety. In the severe types hallucinations of all the senses may be present, disorientation with confusion of thought, fantastic delusions and active excitement with anxiety. Emotionally, dejected and at times ill-humored, obstinate and resistive. Physically there is faulty nutrition and insomnia. It may be differentiated from dementia præcox by greater affect and disturbance of apprehension and orientation at the onset of the disease, and by the absence of negativism and stereotype movements; from the depressive phase of manic-depressive insanity by the absence of psychomotor retardation and the presence of faulty memory. The prognosis is unfavorable; after months of institution treatment, only one-half of the cases recover; the other cases improve gradually, but present as residuals weakness of intellect, poor judgment, inability to keep up with their classes, take up their former occupation, or provide for themselves.

A few cases are reported that seem to come quite properly under the heading exhaustion psychoses, as they apparently arise from excessive exhaustion or insufficient restoration of the nervous elements in the cerebral cortex. There is usually a history of a severe attack of scarlet fever, and evidence of a radical change of the physical organism. But even here one cannot always exclude the possibility of toxemia arising from the destruction of tissue.

Last, but not least, the relation of scarlet fever to dementia præcox must be considered, especially in view of the fact that so seldom can a definite or satisfactory cause for dementia præcox be ascertained. It is conceded, by good authorities, that, now and then, it follows very closely an attack of scarlet fever and bears a direct relationship to the same, but more often it is consecutive to some form of psychosis previously mentioned. It is the *indirect* relationship of scarlet fever to dementia præcox that suggests any ground for discussion. Years may have intervened be-

tween the attack of scarlet fever and the onset of the psychosis. Cases have come under our observation at the New Jersey State Hospital at Trenton with intervals ranging from 7 months to 31 years, with an unquestionable history of the fever indirectly influencing the psychosis.

The disease may have been forgotten or recalled only after careful and specific questioning; at the same time we find a history of convulsions, a delirium, physical weakness, otitis, loss of energy, long or final absence from school or arrested development. Too often the papers committing these cases to the psychopathic hospitals contain no statement whatever indicating the etiology of the psychosis; or such statements as overwork, mental strain, masturbation, intemperance, ill-health, cigarette smoking, a fever, feeblemindedness, etc. On the other hand the examining physician encounters much ignorance on the part of the parents regarding the diseases their children have had. Such statements as "a fever" or "a rising in the head" are only suggestive, not to mention the great number of aliens committed to our hospitals who are practically out of the question.

Kraepelin, in his study of the etiology of dementia præcox, has found that in 10 per cent of the cases there is a previous history of some severe acute illness, particularly typhoid or scarlet fever, from which time the patient has exhibited some change, as increased irritability, susceptibility to fatigue, or impairment of the full mental capacity. From the records of the Trenton State Hospital, we find a case corresponding identically with this view.

Case No. 1.—F. C., male, white, single, age 24 years; occupation, laborer. Birth and infancy normal, strong and bright until six years of age, then had scarlet fever. Apparently good recovery, except mental dullness, more noticeable in his school work. Never independent of his parents, but earned wages. Admitted May 1, 1908. A year before admission a change in disposition occurred; he became seclusive and apprehensive; later suspicious of food, showed peculiar attitudes and mannerisms, was afraid to go to bed at night, had hallucinations of sight and hearing, at times untidy; disorientation and deterioration decided at the present time.

It will also be observed that the history of this case, prior to the onset of the psychosis, is practically the same as we find in those of arrested development or acquired imbecility, varying in degree rather than in symptoms. The following case illustrates this point.

Case No. 2.—W. C., female, single, age 63 years. Family history negative. Personal history: Not unusual until eight years of age; then had an attack of scarlet fever with convulsions. Went to school very irregularly after this on account of her delicate physical condition. She could not keep up with her classes, became discouraged, lost interest in her studies and preferred to stay at home with her parents. After her first menstruation she became stronger in body, but her mental state remained impaired; never self-supporting, but a good helper in her own home. She continued on through life without any essential change except that now and then she had irritable and contrary spells. During the past year, symptoms of senile deterioration were observed. She would wander aimlessly about the house or away from home. Meddled with fire and matches, imagined she was going to starve, and had no clothing to wear; up and about her room at night, accumulating numerous and worthless articles. Committed to State Hospital October, 1908.

Again the question might arise, Why should the first case become one of precocious dementia, while the second continues a high-grade imbecile until arriving within the period of senile deterioration?

I might enumerate cases indefinitely, but that would simply add tedium without compensation. There is yet one condition that seems sufficiently important to justify a few additional remarks. As stated in the early part of this paper, otitis as a complication in scarlet fever has been recorded as high as 75 per cent in some epidemics, with deaf-mutism as high as 23.5 per cent, which makes a population surprisingly large and particularly susceptible to episodes which cause them to be sent to our hospitals.

Case No. 3 illustrates this class. W. S. B., male, white, single, age 30 years; occupation, painter.

Born at full term, labor normal, fifth in line of birth, breast-fed; cut teeth, walked and talked at usual time. Strong and healthy child until about five years of age, when he had an attack of scarlet fever, discharge from both ears, lost sense of hearing, gradually lost his speech; later attended school for the deaf, learned the sign language and painter's trade, and was employed as carriage painter for four years in his home town; laid off because of slack work, became suspicious, irritable and threatening, homicidal and suicidal, carried razors and attempted arson; arrested and committed to the State Hospital. No deterioration. A prompt recovery.

In conclusion, first, allow me to repeat the words of Dr. Earle. "If insanity is to be diminished it must be by prevention and not by cure." Second, that scarlet fever is an etiological factor in the

psychoses and worthy of more consideration. Third, that it is more apt to be followed by complications and sequelæ and impair the future usefulness of the individual when it occurs during the evolution period; hence a most rigid quarantine should be instituted in each and every case of the disease and prophylaxis should be the "battle-cry."

# STUDIES IN HEREDITY WITH EXAMPLES.

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Heredity has long been recognized as an important etiological factor in mental disease. The term, however, has been loosely applied and indefinitely stated. It is usually considered sufficient to state the percentage in which hereditary influences appear in the different psychoses without any attempt to specify the character of these defects. In the present paper an attempt is made to determine more definitely what psychoses or peculiarities are found in the families of a series of cases in the institution with which the writer is connected.

At the very onset it is well to consider the difficulties encountered in such a study. The hospital records constitute one of the important sources of information. One who has had any experience with old asylum histories, however, need not be told that these are often meagre and valueless. Moreover, when an honest effort is made to obtain useful data the informant is frequently unreliable. He may be ignorant or may purposely distort or conceal the real facts. Even if the informant be reliable, yet there is no standard in measuring mental conditions. One must consider also the education of the individual, his environment, opportunities, and so forth, before an equitable judgment of his mentality can be made. Again it is difficult to decide the relation of the peculiarity in ancestors to the psychosis in the case at hand. The fact that a history of insanity or peculiarity may be obtained, after careful search, in the families of many normal individuals must be borne in mind, and the danger of a *post hoc propter hoc* argument avoided.

The biologists are accomplishing much, which will doubtless help to solve the problems of the hereditary etiology of mental disease. A number of analogies may be found between the unit characters of the anatomical and those of the mental make-up. The time may come when, as Prof. Davenport has said, if the

characters of the parents are known, it will be possible to predict the kind of children.

In this regard it is important to make careful and minute studies of individuals in families in respect to certain traits or unit characters and their transmission, disappearance, or change in successive generations. In order to eliminate, so far as possible, the element of difference in education, environment, and opportunities, Strohmayer suggests that the families studied should be from a small little-fluctuating community.

The problem then is extremely complex. The present examination scheme, as usually followed, is not sufficient to collect really valuable data to establish the influence of heredity. To one in search of facts, even the so-called well-worked-up records are exceedingly disappointing.

Besides studying the psychoses in relatives and endeavoring to show in this way a real hereditary influence, it is also well to consider to what extent acquired conditions may affect the descendants. Although some writers dispute the possibility of the transmission of acquired characters, yet it must be acknowledged that such habits as alcoholism in the ascendants leave their mark upon the inheritors. Alcoholism in the parents, especially at the time of conception, has been shown, by more than one authority, to result in the propagation of defectives.

In the examination of the present series of three hundred and eighty-six cases, two hundred and twenty-nine men and one hundred and fifty-seven women, special attention has been paid to the psychoses, peculiarities or toxic habits in paternal and maternal grandparents, uncles and aunts, parents, brothers and sisters. Many of the statistical findings are not greatly different from those of numerous writers on the subject. Of the three hundred and eighty-six cases, one hundred were in the manic depressive group, sixty-eight dementia præcox, fifty-two alcoholic insanity, eighteen general paresis, twenty-three epileptics, six narcotic inebriety, nine imbeciles and one hundred and ten cases in which there was found to be apparently very little hereditary influence and which are grouped together. Ninety-five cases, or a percentage of 24.61 of the whole number, showed undoubted heredity, such as psychoses or eccentricity in ancestors. If those

cases were added which gave a family history of alcoholism only the percentage becomes 35.

STATISTICS OF HEREDITY.

| Form of Insanity. | No. of cases. | | | No. showing heredity. | | | Heredity percentage. | | |
|---|---|---|---|---|---|---|---|---|---|
| | Male. | Female. | Total. | Male. | Female. | Total. | Male. | Female. | Total. |
| Manic Depressive | 47 | 53 | 100 | 19 | 10 | 29 | 40+ | 18.8 | 29 |
| Dementia Præcox | 43 | 25 | 68 | 13 | 4 | 17 | 30+ | 16 | 25 |
| Alcoholic Insanity | 46 | 6 | 52 | 15 | 0 | 15 | 32.6 | 0 | 28.8 |
| General Paresis | 13 | 5 | 18 | 7 | 0 | 7 | 53.8 | 0 | 38.8 |
| Epilepsy | 17 | 6 | 23 | 7 | 1 | 8 | 41+ | 16.6 | 34.7 |
| Narcotic Inebriety | 6 | 0 | 6 | 4 | 0 | 4 | 66.6 | 0 | 66.6 |
| Imbecility | 6 | 3 | 9 | 4 | 0 | 4 | 66.6 | 0 | 44.4 |
| Other Psychoses | 51 | 59 | 110 | 3 | 8 | 11 | 5.8 | 13.5 | 10 |
| Grand Totals | 229 | 157 | 386 | 72 | 23 | 95 | 31+ | 14.6 | 24.6 |

In the manic depressive group, one hundred cases, forty-seven men and fifty-three women, there was an hereditary taint of 40.42 per cent in the former and 18.86 per cent in the latter, or a total of 29 per cent. While most observers agree that the male cases show a greater percentage of heredity than the female, yet the difference is not usually so marked as in the present series.

As has already been said, it is impossible always to state even the probable diagnosis in the cases of insanity in the relatives. A number, however, show evidences of manic depressive insanity, both by individual symptoms, namely depression or excitement with recovery, and by recurrence of the attack. Five were suicides, very likely constituting depression. One case had a maternal grandmother who had a psychosis following childbirth from which she died. His mother was twice admitted with maniacal symptoms, recovering completely from the first attack and staying out of the hospital for eighteen years. Her second hospital residence has been of twenty years' duration, and now she seems to be a senile dement. His sister is also of the manic depressive group. There were seven other probable cases of manic depressive in the relatives, eight of apoplexy or paralysis, a few nervous, neurotic or deficient, two epileptics, several senile dements, a number classed as simply "insane." It is interesting and important to record a well-marked case of dementia præcox,

brother of a female manic depressive—the præcox exhibits the characteristic apathy, dementia, mutism and resistance.

In eight male cases, or 17 per cent, a history of alcoholism with no psychosis was found. If this is added to the percentage already obtained, a total of 57.44 per cent among the males results and a grand total of 37 per cent. Comparing these figures with those usually given the difference is marked. Paton gives the percentage as between 80 and 90; Diefendorf, 70 to 80.

Of the sixty-eight dementia præcox cases, seventeen, or 25 per cent, showed evidence of heredity. There were forty-three men with 30.23 per cent and twenty-five women with 16 per cent hereditary influences. Twelve out of the seventeen cases showing heredity have relatives who are designated as neurotic, peculiar, queer, defective, or as having the same psychosis. In seven there was no psychosis, only the peculiarity or eccentricity. In one case, there was a history of brain abscess in paternal grandfather, paralysis in paternal grandmother, excitement, with recovery, in maternal grandmother and paternal uncle, the latter two possibly manic depressive cases. Some doubt was cast upon the diagnosis of dementia præcox, however, by the complete disappearance in a few days after admission of all symptoms. Some favored a diagnosis of hysterical insanity, others a remission in a præcox. In two instances it was impossible to determine the form of insanity in the relative, one being the father, the other the maternal uncle of the patient. A maternal uncle of one female patient was twice an inmate of this hospital. The records state he was always considered queer. He remained only five months the first time, his age being forty-five. The second admission occurred six years later and from that time until his death, twenty-four years afterwards, he was confined in the hospital. His death was supposed to be from cerebral hemorrhage (post-mortem examination not being allowed). The records state he showed gradual deterioration with dementia towards the end.

There seems, therefore, to be some basis for the statement that in dementia præcox the hereditary influence in the ancestors is frequently a peculiarity, eccentricity or defect causing the persons to be designated as neurotic or queer. Also that the same psychosis is apt to appear in the relatives.

As in the manic depressive group, so also in dementia præcox,

alcoholism in the family history seems to be quite common. There were eight cases which showed alcoholism only in relatives. If these be added to the cases showing insanity or peculiarity the total percentage of heredity is 36.76. There were four cases giving a family history of insanity which also had alcoholic relatives. Most of the alcoholic taint came through the father.

All those cases in which the psychosis or trouble was some form of alcoholism have been placed in the alcoholic insanity group. Thus, chronic alcoholism, alcoholic hallucinosis, alcoholic paranoia and delirium tremens are grouped together.

There were fifty-two cases, forty-six men, six women. Fifteen of the men, or 32.6 per cent, showed some form of insanity or peculiarity in relatives. None of the women gave any evidence of heredity. There were among the relatives three cases of senile dementia, three of paralysis or apoplexy, two of epilepsy or convulsions, five nervous, hysterical or eccentric, five depressions, one being a suicide. The above calculations leave out of consideration any alcoholism in relatives. Nineteen showed alcoholism only in ancestors, eight alcoholism and insanity. The percentage of alcoholism above added to that of psychosis or peculiarity brings the average up to 73.9 per cent.

There seems to be nothing striking or characteristic about the kind of psychoses in relatives of cases of alcoholic insanity. The percentage of alcoholism in ancestors, however, is large and should serve to emphasize the importance of this etiological factor in mental disease.

General paralysis is commonly thought of as a disease in which heredity is of little importance as an etiological factor. Wiglesworth concluded that paresis has less hereditary causation than other forms of insanity. Diefendorf, on the other hand, gives an heredity of 50 per cent. Paton states that the consensus of opinion "favors the view that the family history indicates the existence of nervous or mental trouble in the ancestors in at least 45 per cent of all cases."

In this series there were only eighteen cases of paresis, thirteen men, five women. The latter showed no hereditary influences—the former, 53.84 per cent. If the female cases are included the total percentage becomes 38.88. The specific instances of insanity or peculiarity in the relatives, however, were rather scat-

tered and perhaps difficult to connect with the paretic cases. For instance there were found alcoholism in the father and paralysis in the maternal aunt in one case, queerness in father and depression in brother in another, senile dementia in maternal uncle in still another, alcoholism in father and brother, insanity in maternal grandfather, insanity in brother and lastly apoplexy in father. When one takes into consideration the mass of evidence supporting the syphilitic etiology of paresis, such hereditary influences as have been found in these cases probably play a minor part.

The epileptic group, twenty-three cases, seventeen men and six women, have eight cases (seven men, one woman) showing hereditary influences in the men, 41.17 per cent; in the women, 16.66 per cent, a total of 34.78 per cent.

Among the psychoses or peculiarities of the relatives there were five insane, one maternal grandmother, two maternal grandfathers, two mothers, form of psychosis unknown, one insane brother, a well-marked catatonic præcox, three cases of paralysis—two in fathers and one in mother—one alcoholic dementia in father and one extremely irritable, alcoholic mother. In one case there was a sister diagnosed as arrested development. In two others, there was alcohol in father and mother alone, bringing the total percentage of heredity up to 43.47. Six cases showed some alcoholic relatives, four of these being accompanied by a history of some psychosis or peculiarity.

Six cases of narcotic inebriety, morphinism, all males, gave a high percentage of heredity. Every one of these showed some peculiarity in relatives, either psychoses, alcohol or drug habit. Four, or 66.66 per cent, had relatives with some form of mental disease. One had a maternal aunt and a sister in the institution, both recovering, the form of psychosis in the aunt unknown, that of sister being manic depressive—depressed phase. The father of another was a hemiplegiac and the maternal aunt insane, form unknown. In a third case there was apoplexy in the father, the mother nervous, maternal uncle a suicide, a brother paralyzed and a morphine habitué, the sister nervous. The fourth case showed apoplexy in maternal grandfather and paternal uncle, the father and mother being nervous. Four cases showed also an alcoholic and morphine history in relatives, that being the sole peculiarity in two cases.

The nine imbeciles likewise gave a high percentage of hereditary taint. There were six men and three women, the latter giving negative family histories. Four of the men, or 66.66 per cent, showed actual psychosis or peculiarity. In one the father was markedly eccentric. A second, the maternal grandfather was insane, form unknown. A third showed senile dementia in father, neurotic mother. A fourth, a half-brother was a deaf mute and a sister neurotic. Besides these, two more gave evidence of alcoholism, one in both parents, the other in father only. The total percentage showing psychoses or peculiarities was, therefore, 44.44 per cent, or if those are included which gave an alcoholic family history only, 66.66 per cent.

Under the heading, "Other Psychoses," a number of conditions are grouped, which have not given such a large percentage of heredity, or of which there are only a few cases. These are paranoid condition, senile dementia, arterio-sclerosis, constitutional inferiority, hysterical insanity and unclassified—a total of one hundred and ten cases, fifty-one men and fifty-nine women. Three of the men, cases of constitutional inferiority, showed psychoses or peculiarities in relatives. One, diagnosed as hereditary cerebellar ataxia, gave evidence of the same disease in mother and brother. A second had an alcoholic paternal grandfather and father, and a maternal aunt who had a psychosis from which she recovered. A third had a neurotic father and paternal uncle, and an insane maternal uncle, form unknown.

Eight of the women showed heredity. One, a case of delirium, had a sister an apoplectic. A case of hysterical insanity had a mother insane, the psychosis being a recurrent type. The father and sister of a constitutional inferiority with hysterical complexes were insane, form unknown. A senile dement had an insane sister, form unknown. An arterio-sclerotic, with hemiplegia, showed mother and paternal uncle insane, form unknown. A case of involutional insanity had a brother and a sister insane, with recovery. Two paranoid conditions showed heredity, one had two præcox brothers and a feeble-minded brother, the other a sister having a recurrent form of insanity.

Returning to a general consideration of the findings, one is led to conclude from the present series of cases that the percentage of hereditary influences is much lower than that usually given.

## MANIC-DEPRESSIVE GROUP.

| Name. | P. Gr-Fa. | P. Gr-Mo. | M. Gr-Fa. | M. Gr-Mo. | Father. |
|---|---|---|---|---|---|
| *Male—* | | | | | |
| A. C. | | | | In. fol. c. b. | |
| A. J. | | | | Stroke. | |
| G. S. | | | | | |
| C. V. C. | | | Apoplexy. | | Al. Paral. |
| P. P. W. | | | | | |
| E. B. | | | | | |
| C. C. S. | | | | | Dep. Sui. |
| L. J. D. | | | | | Paralysis. |
| F. G. | | | | | |
| M. H. | Insane. | | | | |
| H. H. | | | | | Alcoholic. |
| F. B. | | | Ins. Sui. | | Alcoholic. |
| E. B. L. | | | | | Insane. |
| N. M. | | | | | |
| R. P. | | | | | Neurotic. |
| T. C. | | | | | |
| T. P. | | | | | Insane. |
| H. M. | | | | | M. D. (?) |
| W. E. C. | | | | | |
| *Female—* | | | | | |
| M. S. | | Insane. | | | |
| I. S. | | | | | Rec. Insane. |
| A. H. | S. D. | Insane. | | | Alcoholic. |
| A. L. | | | | | Alcoholic. |
| M. A. | | | | | Insane. |
| A. N. | | | | Insane. | |
| J. M. | S. D. | Relig. Ins. | | | Alcoholic. |
| K. P. | | | | | |
| K. K. | | | | | |
| L. V. | | | | | |
| *Alcoholism only (all male cases):* | | | | | |
| J. A. | | | | | Alcoholic. |
| J. M. | | | | | Mod. Alcol. |
| H. R. | | | | | Alcoholic. |
| J. D. | | | | | Alcoholic. |
| J. R. | | | | | Alcoholic. |
| G. S. | | | | | Alcoholic. |
| H. B. | | | | | Alcoholic. |
| A. K. | | | | | Alcoholic. |

## DEMENTIA PRÆCOX.

| | | | | | |
|---|---|---|---|---|---|
| *Male—* | | | | | |
| C. J. | Peculiar. | | | | M. D. D. P. (?) |
| M. G. | | | | | Alcoholic. |
| G. E. | | | | | |
| P. H. | Br. Abscess. | Paralysis. | | Insane. | |
| P. O. | | | | | |
| N. E. | | | | | Peculiar. |
| J. O. | | | | | Alcoholic. |
| M. K. | | Stroke. | | Insane. | |
| C. J. | Alcoholic. | | | | Alcoholic. |
| J. R. | | | | | Al. Hemipl'g. |
| C. B. | | | | | |
| J. DeF. | | | | | |
| F. S. | | | | | Defective. |
| A. W. | Insane. | | | | Eccentric. |
| *Female—* | | | | | |
| J. W. | | | | | Insane. |
| A. B. | | | Insane. | | |
| A. LaR. | | | | | |
| E. A. | | | | | D. P. |
| *Alcoholism in relatives only (all male cases):* | | | | | |
| H. B. | | | | | Alcoholic. |
| J. D. | | | | | Alcoholic. |
| A. S. | | | | | Alcoholic. |
| J. K. | | | | | Alcoholic. |
| F. J. | | | | | Alcoholic. |
| S. R. | | | | | Alcoholic. |
| U. P. | | | | | Alcoholic. |
| I. F. | | | | | Alcoholic. |

## ALCOHOLIC INSANITY.

| | | | | | |
|---|---|---|---|---|---|
| G. G. | | | | | |
| J. MacM. | | | | | Alcoholic. |
| M. L. | | | | | |
| F. R. | | | | | |
| P. D. | | | | | |
| A. T. | | | | | |
| W. F. | Alcoholic. | | Alcoholic. | | Alcoholic. |
| S. G. | Demented. | | | | Alcoholic. |
| C. V. | | | | | Melanchol. |
| C. D. | | | | | |

## DETAILS OF H

### MANIC-DEPRESSIVE GROUP.

| Name. | P. Gr-Fa. | P. Gr-Mo. | M. Gr-Fa. | M. Gr-Mo. | Fa |
|---|---|---|---|---|---|
| *Male—* | | | | | |
| A. C. | | | | In. fol. c. b. | |
| A. J. | | | | Stroke. | |
| G. S. | | | | | |
| C. V. C. | | | Apoplexy. | | Al. P |
| P. P. W. | | | | | |
| E. B. | | | | | |
| C. C. S. | | | | | Dep. |
| L. J. D. | | | | | Paral |
| F. G. | | | | | |
| M. H. | Insane. | | | | |
| H. H. | | | | | Alcol |
| F. B. | | | Ins. Sui. | | Alcol |
| E. B. L. | | | | | Insan |
| N. M. | | | | | |
| R. P. | | | | | Neur |
| T. C. | | | | | |
| T. P. | | | | | Insan |
| H. M. | | | | | M. D. |
| W. E. C. | | | | | |
| *Female—* | | | | | |
| M. S. | | Insane. | | | |
| I. S. | | | | | Rec. |
| A. H. | S. D. | Insane. | | | Alcol |
| A. L. | | | | | Alcol |
| M. A. | | | | | Insan |
| A. N. | | | | Insane. | |
| J. M. | S. D. | Relig. Ins. | | | Alcol |
| K. P. | | | | | |
| K. K. | | | | | |
| L. V. | | | | | |
| *Alcoholism only (all male cases):* | | | | | |
| J. A. | | | | | Alcol |
| J. M. | | | | | Mod. |
| H. R. | | | | | Alcol |
| J. D. | | | | | Alcol |
| J. R. | | | | | Alcol |
| G. S. | | | | | Alcol |
| H. B. | | | | | Alcol |
| A. K. | | | | | Alcol |

### DEMENTIA PRÆCOX.

| Name. | P. Gr-Fa. | P. Gr-Mo. | M. Gr-Fa. | M. Gr-Mo. | Fa |
|---|---|---|---|---|---|
| *Male—* | | | | | |
| C. J. | Peculiar. | | | | M. D. |
| M. G. | | | | | Alcol |
| G. E. | | | | | |
| P. H. | Br. Abscess. | Paralysis. | | Insane. | |
| P. O. | | | | | |
| N. E. | | | | | Pecu |
| J. O. | | | | | Alcol |
| M. K. | | Stroke. | | Insane. | |
| C. J. | Alcoholic. | | | | Alcol |
| J. R. | | | | | Al. H |
| C. B. | | | | | |
| J. DeF. | | | | | |
| F. S. | | | | | Defe |
| A. W. | Insane. | | | | Ecce |
| *Female—* | | | | | |
| J. W. | | | | | Insan |
| A. B. | | | Insane. | | |
| A. LaR. | | | | | |
| E. A. | | | | | D. P. |
| *Alcoholism in relatives only (all male cases):* | | | | | |
| H. B. | | | | | Alcol |
| J. D. | | | | | Alcol |
| A. S. | | | | | Alcol |
| J. K. | | | | | Alcol |
| F. J. | | | | | Alcol |
| S. R. | | | | | Alcol |
| U. P. | | | | | Alcol |
| I. F. | | | | | Alcol |

### ALCOHOLIC INSANITY.

| Name. | P. Gr-Fa. | P. Gr-Mo. | M. Gr-Fa. | M. Gr-Mo. | Fa |
|---|---|---|---|---|---|
| G. G. | | | | | |
| J. MacM. | | | | | Alcol |
| M. L. | | | | | |
| F. R. | | | | | |
| P. D. | | | | | |
| A. T. | | | | | |
| W. F. | Alcoholic. | | Alcoholic. | | Alcol |
| S. G. | Demented. | | | | Alcol |
| C. V. | | | | | Mela |
| C. D. | | | | | |

## MANIC-DEPRESSIVE GROUP.

| Mother. | Pat. Uncle. | Pat. Aunt. | Mat. Uncle. | Mat. Aunt. | Brother. | Sister. |
|---|---|---|---|---|---|---|
| M. D. S. D. | | | | | | M. D. |
| Dep. Sui. | | | | | 2 Alcoholic. | |
| | | | M. D. | | | |
| Apoplexy. | | Insane. | | | | |
| Nervous. | | | | | | |
| | | | | | | |
| | 2 Paral. | | | | | |
| | | | | | M. D. | |
| | 2 Insane. | | | | | |
| | Br. Ab. Sui. | | | | | |
| | | | Insane. | | | |
| | | | | | Insane. | |
| | | | | | Peculiar. | Peculiar. |
| Neurotic. | | | | | Defective. | |
| S. D. | | | | | | |
| | | | | | | |
| | | | | | | |
| | | Insane. | | | | |
| | | | | | Ins. Fb. Md. | Ins. Sui. |
| | | | | | | |
| | | | | | Rec. Ins. | |
| Insane. | | | | | | |
| | | | | | | Insane. |
| | | | | | | Rec. Ins. |
| Paral. Nerv. | | | | | | |
| Deficient. | | | | | Epilepsy. | Nervous. |
| | | | | Insane. | | |
| | | | | Insane. | D. P. | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

## DEMENTIA PRÆCOX.

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | Insane. | | | |
| Ins. (?) Pec. | | | | | | |
| | Insane. | | | | | |
| Ins. Pec. | | | | | | |
| Peculiar. | | | | | | |
| Peculiar. | | | | | | Queer. |
| Neurotic. | | | | | | |
| Nervous. | Alcoholic. | | | | | |
| | | | | | | |
| | | | | | D. P. | |
| | | | | | D. P. | |
| | | | | | Defective. | Defective. |
| | | | | | | |
| | | | | | | |
| | Insane. | | | | | |
| | | Defective. | Defective. | | | |
| | | | | Insane. | | |
| | | | | | | |
| | Alcoholic. | | | | 2 Alcoholic. | |
| Alcoholic. | | | | | | |
| | | | | | Alcoholic. | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

## ALCOHOLIC INSANITY.

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | Insane. | |
| S. D. | | | | | | |
| | Insane. | | | | | |
| | | | Eccentric. | | | |
| Paralysis. | | | | | | |
| | | | Epileptic. | | Alcoholic. | |
| | | | Convulsions. | | | |
| | | | | | | |
| Nervous. | | | Sui. Ins. | Insane. | | |
| Eccentric. | | | Alcoholic. | | | |

ALCOHOLIC INSANITY—Continued.

| Name. | P. Gr-Fa. | P. Gr-Mo. | M. Gr-Fa. | M. Gr-Mo. | Father. |
|---|---|---|---|---|---|
| J. H. | | | | | Al. Paral. |
| A. C. | | Apoplexy. | Sen. Dem. | Nervous. | |
| J. H. | | | | | Alcoholic. |
| L. C. | | | | | |
| *Alcoholism only:* | | | | | |
| T. B. | | | | | Alcoholic. |
| J. MacM. | | | | | Alcoholic. |
| T. R. | | | | | Alcoholic. |
| C. S. | | | | | Alcoholic. |
| L. U. | | | | | Alcoholic. |
| F. C. | Alcoholic. | | | | |
| T. MacC. | | | | | |
| I. H. | | | | | Alcoholic. |
| J. K. | | | | | Alcoholic. |
| F. L. | | | | | Alcoholic. |
| T. A. | | | | | Alcoholic. |
| N. G. | | | | | Alcoholic. |
| T. P. | | | | | Alcoholic. |
| W. F. | | | | | Alcoholic. |
| T. L. C. | | | | | Alcoholic. |
| T. B. | | | | | Alcoholic. |
| S. P. | | | | | |
| T. K. | | | | | Alcoholic. |
| N. N. H. | | | | | |
| **GENERAL PARESIS.** | | | | | |
| J. C. | | | | | Alcoholic. |
| H. S. | | | | | Queer. |
| H. M. | | | | | |
| J. D. | | | Insane. | | |
| T. C. | | | | | |
| E. B. | | | | | Apoplexy. |
| T. P. | | | | | Alcoholic. |
| **EPILEPSY.** | | | | | |
| W. K. | | | | Insane. | |
| S. B. | | | | | Al. Demen. |
| D. W. | | | | | |
| C. H. | | | | | Paralysis. |
| D. C. | | | | | Alcoholic. |
| R. E. | | | Insane. | | |
| A. L. | | | Insane. | | |
| C. W. | | | | | Alcoholic. |
| W. C. | | | | | |
| A. Van c. F. | | | | | Paralysis. |
| **NARCOTIC INEBRIETY.** | | | | | |
| W. B. | | | | | Mod. Alc. |
| H. C. | | | | | Hemipleg. |
| U. S. | | | | | Al. Apoplexy |
| G. S. | | | Apoplexy. | | Nervous. |
| A. T. | | | | | Alcoholic. |
| J. L. | | | | | |
| **IMBECILITY.** | | | | | |
| F. S. | | | | | Eccentric. |
| W. B. | | | Insane. | | |
| F. P. | | | | | S. D. |
| G. H. | | | | | Alcoholic. |
| C. H. | | | | | Alcoholic. |
| **OTHER PSYCHOSES.** | | | | | |
| *Constitutional Inferiority:* | | | | | |
| F. M. | | | | | Neurotic. |
| W. C. | | | | | Alcoholic. |
| A. M. | Alcoholic. | | | | |
| *Paranoid Condition:* | | | | | |
| M. L. | | | | | |
| R. N. | | | | | |
| *Involutional Psychosis. Arterio-sclerosis:* | | | | | |
| N. W. | | | | | |
| *Arterio-sclerosis. Hemiplegia:* | | | | | |
| E. A. | | | | | |
| *Senile Dementia:* | | | | | |
| M. C. | | | | | |
| *Hysteria:* | | | | | |
| A. S. | | | | | Insane. |
| M. P. | | | | | |
| *Delirium:* | | | | | |
| M. Z. | | | | | |

## ALCOHOLIC INSANITY—Continued.

| Mother. | Pat. Uncle. | Pat. Aunt. | Mat. Uncle. | Mat. Aunt. | Brother. | Sister. |
|---|---|---|---|---|---|---|
| | | | | | | Insane. |
| Hysteria. | | | | | | |
| | | | | | | Insane. |
| Man. Dep. | | | | | Ins. Dep. | Ins. Dep. |
| | Alcoholic. | | | | Alcoholic. | |
| Same Alc. | | | | | | |
| | Alcoholic. | | | | | |
| | Alcoholic. | | | | Alcoholic. | |
| | Alcoholic. | | | | | |
| | Alcoholic. | | | | | |
| | Alcoholic. | | | | Alcoholic. | |
| | | | | | | |
| | Alc. Several. | | | | Alc. Sev. | |
| | | | | | | |
| | | | | | Mod. Alc. | |
| | | | Mod. Alc. | | | |
| | | | | | | |
| | | | | | Alcoholic. | |
| | | | | | 3 Alcoholic. | |
| Alcoholic. | | | | | | |
| | | | | | | |
| | | | | | 2 Alcoholic. | |
| | | | | | | |

## GENERAL PARESIS.

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | Paralysis. | | |
| | | | | | Ins. Dep. | |
| | | | Sen. Dem. | | | |
| | | | | | | |
| | | | | | Insane. | |
| | | | | | | |
| | | | | | Alcoholic. | |

## EPILEPSY.

| | | | | | | |
|---|---|---|---|---|---|---|
| Insane. | | | | | D. P. | |
| | | | | | | |
| Al. Irrit. | | | | | | |
| | | | | | | |
| Hemipleg. | | | | | | |
| Insane. | | | | | | |
| | Alcoholic. | Alcoholic. | Alcoholic. | Alcoholic. | Alcoholic. | |
| | | | | | | |
| Alcoholic. | | | | | | |
| | | | | | | Arr. Dev. |

## NARCOTIC INEBRIETY.

| | | | | | | |
|---|---|---|---|---|---|---|
| | Alcoholic. | Ins. Recov. | | | | M. D. |
| | | | | Insane. | | |
| Nervous. | | | Suicide. | | Par. Morph. | Nervous. |
| Nervous. | Apoplexy. | | | | Opium. | |
| | | | | | | |
| | | | | | | Al. Morph. |

## IMBECILITY.

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |
| Neurotic. | | | | | Deaf Mute. | Neurotic. |
| Alcoholic. | | | | | | |
| | | | | | | |

## OTHER PSYCHOSES.

| | | | | | | |
|---|---|---|---|---|---|---|
| Same. | | | | | Same. | |
| | Peculiar. | | Insane. | | | |
| | | | | Ins. Recov. | | |
| | | | | | | |
| | | | | | 2 D. Pr. I. | F. Mnd. |
| | | | | | | Re. Ins. |
| | | | | | | |
| | | | | | Insane. | Ins. Recov. |
| Insane. | Insane. | | | | | Insane. |
| | | | | | | |
| | | | | | | Insane. |
| | | | | | | |
| Ins. Recov. | | | | | | |
| | | | | | | |
| | | | | | | Apoplexy. |

The attention has already been directed to the much lower rate found, especially in manic depressive and dementia præcox. A certain proportion of the discrepancy can doubtless be accounted for by the failure to discover the existing hereditary taint. The difference is so great, however, as to make one think that perhaps too much stress has been put upon heredity.

Besides manic depressive and dementia præcox, several other groups showed considerable hereditary influence. In alcoholic insanity the large percentage of alcoholic family history is the striking feature.

General paresis apparently showed a large percentage, but the influence of heredity is probably not as great as the figures might imply.

Epilepsy gave a heredity of both psychoses and alcoholism.

Psychoses, peculiarities and habits among relatives were common in narcotic inebriety.

Imbecility likewise showed considerable hereditary influence.

The frequency of alcoholic family history in certain psychoses is quite marked. As might be expected, the largest percentage of alcoholic heredity was shown in alcoholic insanity. In the manic depressive group and dementia præcox also, alcoholism in the relatives was far from being unusual.

While it may not be possible from the present evidence to conclude with absolute certainty as to the kind of psychosis in the relatives of manic depressive and dementia præcox cases, yet a few general statements are possible.

The prevalence of psychoses in the manic depressive group as compared with the percentage of the peculiar or eccentric type in dementia præcox is noticeable. In the manic depressive cases, although there is frequently doubt as to the character of the psychosis, the evidence seems strong as to the existence of some kind of a psychosis. On the other hand, in dementia præcox the relative is often described as queer, eccentric, or by some similar term.

The evidence seems to be against the theory as an absolute rule that cases of manic depressive and dementia præcox do not occur in the same family. At least one well-marked manic depressive woman was shown to have an undoubted dementia præcox brother and there were several other possibly similar cases, the diagnosis, however, not being so certain.

On the other hand, there are a number of instances of the same psychosis in the relatives both in dementia præcox and manic depressive.

## DISCUSSION.

Dr. Abbot.—In any study of heredity it is very important to take into account the *relative proportion* of insanity to sanity in the antecedents and not only the number of insane; that is, in a large family of children, there may be one who is insane; the relative proportion of insanity in that family is small. There are comparatively few normal individuals who cannot find, if they look back through their direct and collateral ancestors, some case of insanity.

As to the influence that these cases may have, it seems to me that the relative amount of insane to sane is quite as important as the presence of any insane at all.

If one carries out such studies as these with regard to the insane, taking also the number of normal individuals in the ancestry in the same generations and compare it with the heredity of normal individuals, I think we will find that the effect or the influence of heredity is very much less than it is usually credited with.

Personally, in the great majority of cases I do not lay very much stress on insanity in the antecedents as a causative factor of the psychosis in the individual who comes under observation.

# REVIEW OF INFECTIVE-EXHAUSTIVE PSYCHOSES WITH SPECIAL REFERENCE TO SUBDIVISION AND PROGNOSIS.

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In the New York State Hospital classification as projected by Dr. Adolf Meyer one of the divisions is called the infective-exhaustive group. It includes "autotoxic or infective or exhaustive psychoses not included in the group with a nervous disease or nervous complex or tangible brain disease; subdivided into (a) thyrogenous disorders, (b) uremic, eclamptic and demonstrated gastro-intestinal disorders, (c) febrile and postfebrile deliria, (d) exhaustive deliria and kindred psychoses." An allied group includes "those to all intents and purposes the same, but in which we cannot demonstrate such an etiology." Such cases have been in the past grouped in various ways by different writers. Let us review a few.

Ziehen describes acute hallucinatory paranoia which arises from exhaustion, intoxication, infection, trauma, hysteria and epilepsy, polyneuritis, puberty, climacteric, senility or the puerperium. Its diagnosis depends on proof of primary hallucinations which prevail throughout. Out of these develop delusions. Affect and association are only secondarily disturbed. With its varieties and subdivisions this would seem to include so many cases as to be of little help to us in any direction. For example there is the greatest possible range of prognosis. Moreover we find in cases otherwise similar that hallucinations were not prominent, and the existence of these can be determined only on recovery.

Krafft-Ebing object that this is not a paranoia and does not pass into a paranoia. He calls it primary hallucinatory insanity.

[1] To Dr. Wm. Mabon, superintendent and medical director of Manhattan State Hospital, I am indebted for permission to use the hospital records; and to Dr. George H. Kirby, director of clinical psychiatry, for the impetus to this study and very many suggestions as to the form and content of this paper.

It is to be diagnosed from mania and melancholia because the behavior is purely reactive. Constant symptoms are poor sleep, nervous excitement and confusion of ideas.

Ziehen presents a large group of conditions of clouded consciousness. These are alike in that the beginning and ending are very abrupt, course very short, amnesia follows; hallucinations and delusions may be absent, but the orientation and connection of ideas are disturbed. The principal causes are sleep, epilepsy, hyseria, alcohol and other toxic drugs, congestion or spasm of the arteries, migraine, neuralgia, strong affect, trauma. We need not discuss these varieties, which indeed from their symptomatology could hardly be differentiated. Accompanying or symptomatic deliria are distinguished from the preceding groups in that the course is closely related to the infection.

Wernicke describes in his own peculiar terminology confused mania or agitated confusion. There are psychomotor or psychosensory disorders and dominant symptoms of irritation. An asthenic confusion also with allopsychic disorientation is met after other exhaustive psychoses.

Kraepelin attempts to distinguish infection from exhaustion psychoses. The first include fever delirium, infection delirium (such as arises during the incubation period of some severe infection) and post-infection mental debility apprearing in convalescence on the ground of a fever or infection delirium. Exhaustion psychoses are collapse delirium at the crisis of some fever, acute confusion or amentia, and chronic acquired nervous exhaustion, which differs from other nervous exhaustions merely in that its starting point is some severe illness or strain. Thus his divisions are determined partly by the stage of the illness at which the disturbance develops, partly by the form of the psychosis.

Observe Kraepelin's types briefly with reference to experience at Manhattan State Hospital. Few fever deliria reach us, for it is the policy of Bellevue Hospital, whence most of our patients come, to transfer as few fever cases as possible. Infectious deliria, since they usually precede the outbreak of some severe illness, are sifted out by the general hospitals of New York City. Collapse delirium occurs in a state of such weakness that transfer to a state hospital would be unlikely. Chronic acquired nervous exhaustion is not certainly the result of that alone which appears as

the upsetting factor, and is generally not grouped by us with the infective-exhaustive cases. The bulk of those left are post-infection mental debilities or similar states apparently based on poor health and in a few cases on prolonged worry. Amentia is the only remaining type, and I do not find it frequent.

Kraepelin divides these debilities into four degrees: The first shows mental and emotional weakness; he is dull, tired, unable to collect his thoughts, may see vivid pictures when his eyes are closed. There are premonitions of death, suspicions leading to violence, attempts at suicide. The second stage shows prominent hallucinations, fantastic delusions, anxious excitement, profound obscuration, disconnected talk. There are dead people behind the bed, walls and furniture move, devil or Virgin appears, he does not know whether he is in heaven or hell, is given horsemeat, and so on. Recovery is slow with decreased efficiency and weak memory. The third subdivision passes rapidly into stupor, and patient later continues stupid or tearful with deficient memory and judgment. In the fourth degree occurs vivid delirious excitement with marked flight, delusions of grandeur, loss of orientation, great distractibility, voices, angels at the ceiling and such like. Misidentifications are frequent. Particularly with the third group (he says) the patient may remain mentally and emotionally incapable, apathetic, undecided, but apart from these defects he assumes a favorable outcome by assuming that any other is due to a different process. "In a few cases . . . . develop . . . . mental diseases which might also occur under other conditions—manic-depressive insanity, dementia præcox, general paralysis. In these cases the fever is not the cause but the occasion."

I wish to review with you a number of cases (22) observed at Manhattan State Hospital to see if they throw any light on the composition and outcome of the infective-exhaustive group. It must be admitted that patients with adequate etiology, symptoms apparently sufficient for classing with this group, notwithstanding show deterioration indistinguishable from dementia præcox, and a few such cases are considered in this list. Cases ending in death are with one exception excluded, since they do not illuminate the issues. We will divide them so far as possible into Kraepelin's degrees of severity.

A comparatively mild case was K. L. During typhoid fever

she jumped out of bed, demanded a priest, said she was going to die. She would not eat for a time, complained that her arms were heavy, misidentified, replied only when urged, thought people were calling her. She grasped mental tests slowly and avoided mental effort, refusing to count change with the words " It puzzles me." It was four months before her normal state returned fully though she left the hospital earlier. F. P. during puerperal fever became " delirious," then depressed, and had to be tube-fed. She lost track of time and movement from one hospital to another, saw faces and pictures on the wall, heard voices at night. With us she was afraid the patients would hurt her, thought one was mocking her by belching, said the medicine tasted like paint, heard voices of enemies. Soon she cleared up but had little idea of time duration during the hazy period. J. G. after uterine hemorrhage thought someone wanted to kill her, that they tried to get into her room at night. She talked freely but incoherently, was worried and restless, complained that the food was not what she wanted, that she was lonesome. Recovery in nine months. Another typhoid case with different outcome was P. M. During convalescence he became moody and once was excited, throwing his chair about. On going home from the general hospital where he had been sick he sang, shouted and thought he was driving. Gradually he reached a state where he complained of books being put in his head, that his thoughts were read, that machines were used on him. He thought Central Islip was Blackwell's Island. He is discontented, idle, surly, irritable. These four cases would fall in Kraepelin's first division.

The second degree with prominent hallucinations, fantastic delusions, etc., were more numerous. C. T., after a period of poor health, grew confused and could hardly find her way around the streets of a city she had formerly known well and was now visiting. She grew uneasy and agitated, smelled peculiar odors and saw " such horrible people " staring. She misidentified strangers as members of her family, thought the blowing off of a gas retort was a deadly explosion and shouted for the police between mouthfuls of her supper. Her husband's voice came from outside the building. Later she tried determinedly to kill herself. Gradually she became clear. A. F., in the eighth month of lactation, while in poor general health, developed peculiar bodily sensations which

she thought due to poison. Then she talked of Black Hand persecution, heard Italians at the foot of the stairs and negroes on the roof. Once she did not recognize her husband, saying, "This is the man that killed my baby." Symbols of the Black Hand appeared everywhere; she was annoyed by hallucinations of sight and hearing. A newspaper portrait she thought hers and two physicians her brothers. She ran about the place half clad, thought it was the House of the Good Shepherd. For a time she was cheerful, flippant, sometimes resistive. Then she recovered. A. S.'s trouble started during the fever of gastro-enteritis. In a general hospital she misinterpreted all sorts of sounds and tried to choke the physician who, by giving her mercury, had caused all her troubles. Her mood, arising out of grandiose delusions, was cheerful; nevertheless she was suspicious. She never gained complete insight, but has done well outside the hospital a long time. H. H. was worried over sexual irregularities and working unnecessarily hard during the weeks following labor. She saw ghosts, cats and dogs. Misidentifications, perplexity, her husband's voice from the floor, disorientation are noted. Improvement came slowly and judgment lagged behind other faculties. B. P. suffered general ill health and was grieved by the death of her children. During another pregnancy she heard fire engines, people talking outside and shots fired by people who were coming to kill her husband. Her speech became incoherent, but she was evidently intensely worried. She refused food, got extremely suspicious and apprehensive. Remarks by other patients she thought were aimed at her; people said she had coons for brothers. Gradually she gained strength and courage. L. N., during convalescence from erysipelas, thought people would kill her and believed herself poisoned. Orientation was hazy and she was suspicious and fearful. At time of discharge she would not yet speak unreservedly of her experiences but did mention seeing and hearing things. F. K. had poor health and nephritis. She complained that she was not given food, predicted that the doctor's medicine would kill her, told in what clothes she was to be laid out. Violence, an attempt at suicide and incoherent speech followed. Her most prominent hallucinations were tactile. She thought the place a telegraph office and could tell only the month when a calendar was before her. Other patients she thought men and all talked

ragtime. Improvement came slowly, and as in other cases amnesia remained.

Two similar cases failed to recover. J. H. had pneumonia, got out of bed, was unreasonable and violent, called out the window to friends both dead and alive. She was semistuporous for a while, heard funny voices through the wall. Then she admitted having been mixed up in the head, but was averse, sometimes resistive, always silly and indifferent. So she remains. N. H. had hallucinations and did very peculiar things a half year before commitment, but was employed at her occupation of nurse, when an infected finger led to a further mental upset. She was depressed, confused, apprehensive, talking of visits at night from her dead mother, the Virgin passing hands over her face, prospective death by murder. Her delusions grew more absurd and extensive and are now incoherent. She talks incessantly without goal. On account of the development during septicemia of the trouble that led to her commitment her psychosis was at first thought to belong to this group.

The next is a transition case to the third—the stuporous—variety. A. G. was nursing her three-months-old infant in spite of deteriorating health when she began to speak of extensive purchases and to say she felt as if going crazy. She thought everybody was talking about her and that the landlord had an ambulance waiting for her. Vivid hallucinations and fear of death succeeded; then for ten days she did not speak. She passed through several fantastic experiences, being put through a boiler and down a tunnel. When other patients spoke on indifferent topics they seemed to be defaming her. For a time her orientation was obscured. D. K., during lactation and hard work dreamed of ghosts and coffins, saw men walking on the ceiling and her children jumping out the window. Voices threatened to cut her head off and bury her. Everything was "doubled." Two months she was mute. A. B. had longstanding uterine trouble. She heard neighbors planning to rob her flat and appealed to the police for protection, but grew rapidly confused and incoherent, and suspicious and fearful by reason of her hallucinations. Though willing to talk she could not control the train of thought. For three weeks she did not speak and for some time longer showed variable responsiveness. C. B. had pericarditis and mistook identities,

complained that her father was talking about her, shouted incoherently at times, but soon sank into stupor, retaining saliva and urine, resisting passively and requiring to be fed by spoon. When in other regards improving she still thought she was to be killed. F. H., while in hospital with superficial infection after hysterectomy, became confused in speech and expected to be killed. She screamed with terror, resisted attention violently, repeated phrases but did not answer questions. More than a year has elapsed and she is still mute, inactive, resistive.

Fourth stage—violent excitement: L. M. had a post-partum hemorrhage. She was urged to get up and bathe on the seventh day, and attacked her mother-in-law with an axe. She passed quickly through a wild, apprehensive excitement associated with evanescent hallucinosis. She was kept in the hospital some time after apparent recovery, but on the fourth day after discharge got confused and noisy while out walking, and after a week of violent excitement died suddenly. S. S., after suffering some months from an exhausting vaginal discharge, spoke incoherently and with many repetitions, rushed about shrieking wildly, reacting to fearful auditory hallucinations. The degree of excitement fluctuated but was always notable. Gradually she became quiet and gained insight.

This brings us to a patient who exhibited flight at one time, depression later. M. D. during puerperium said she was the Virgin, abused everybody, did not sleep, refused food. She showed tremendous excitement with fear. A few fair samples of flight were recorded. After three days out of bed she entered another excitement in which she talked with her father under the bed, misidentified, had many rapidly changing delusional ideas. On emerging from this she was unduly sober and felt unable to do things.

A possible amentia in Kraepelin's sense, but without adequate physical basis and with only moderately upsetting mental factors, was the psychosis of L. B., who thought that everybody was dead, that they wanted to kill her. She seemed dazed, commented on all that happened, but evidently could not grasp the situation. Hallucinations were present, orientation much disturbed, and her ideas changed rapidly. Death in various forms was threatened, and she thought that injury had already been done to her children.

Clearly the subdivisions overlap. Let me instance a case that fits in nowhere. M. W. went home from a general hospital after typhoid, apparently well. A week later she began to do peculiar things, such as to demand, "Look at me!" without giving a reason. She would not believe that her brother had left the house and searched for him in drawers and under the bed. Solemnly she confessed various imaginary wrongdoings. Four months she was in another institution; we do not know what happened there, but on transfer she was much befogged, did not recognize her brother and on the trip to New York repeated monotonously, "Open the door!" For hours she would chant a few sentences monotonously; at times the productions could be influenced by what was said to her. In a few days she became accessible and showed defective orientation and amnesia for some four months. She was removed from the hospital without insight and in an irritable frame, but was reported later as having recovered.

A difficult question is the separation of deteriorating cases from recoverable. As you have observed, several of these patients did poorly; some of these had a mild delirium, some a moderate, some a severe. It would have been easy to add others in which the diagnosis infective-exhaustive psychosis was made at one time or another, but without what now appears satisfactory reason. Among them typhoid fever, pneumonia, postoperative infection appear as etiology, but this does not help us; in the same series are recovered cases with typhoid and puerperal infections. Nor can we say as yet that the previous mental makeup determines: P. M. was headstrong, F. H. secretive; but among the recovered cases F. K. was unreasonable to the point of violence, A. S. stubborn and not given to forming friendships. Perhaps if the study of the mental makeup were carried further it might yield the same help as in other fields. We can at present say only that delirium is so natural and fundamental a reaction to severe disturbance of the human economy that it is quite unsafe to attempt prognosis or more than tentative diagnosis till the affair has had time for the causal lesion to be repaired and for incidental features to disappear. Let us accumulate careful observations; the last word on delirium is not spoken. For subdivisions of the group some simple scheme of degree of severity seems as useful as anything more elaborate and etiological when admissions are sifted as are those in New York city.

# THE APPLICATION OF IMMUNITY REACTION TO THE CEREBRO-SPINAL FLUID.

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Time does not allow of a preliminary explanation and discussion of the various theories of immunity by which modern investigators have sought to explain the changes which occur in the serum of an animal which has been inoculated with some foreign cell or toxin.

Suffice it to say that the hypotheses of Ehrlich have so well withstood the assaults of critical experimentation that they have come to be tacitly accepted as, at least, a convenient working basis until chemistry in its rapid strides shall have come to our aid and simplified what are now merely to be expressed as properties possessed by a serum into definite colloid or proteid formulas. In the following paper the use of technical terms has been avoided so far as possible, but such as do occur are among those which were introduced by Ehrlich and are still in constant use.

One of the ingenious applications of an immunity reaction to diagnosis has been the so-called " complement-fixation test " introduced by Bordet and Gengou in 1901.[1] The immune property of a serum, e. g., the immunity which a typhoid patient's serum acquires against the typhoid bacillus, by reason of which it agglutinates and destroys the bacilli in the Widal test, is known to consist of two parts. One part, called antibody, represents that peculiar property of the serum which makes it immune to that organism and to no other. This antibody is thermostabile, that is, it is not affected by heating the serum to 56 C. The other part, complement, is a constituent of all sera whether normal or immune. It is thermolabile and is driven off by heating to 56 C., but can be restored by simply adding a small quantity of fresh, unheated, normal serum from the same or from another suitable species. So, if we first heat the typhoid patient's serum and then add it to an extract made from a broth culture of typhoid bacilli, the organisms will not be destroyed, for the serum has been inacti-

vated by the loss of its native complement. But by adding a few drops of serum, from, let us say, a guinea-pig, the patient's serum is at once re-activated and the lysis of the bacilli takes place.

If we have a patient on whom we wish to make a specific diagnosis of typhoid, we have the direct method of demonstrating the bacilli in the patient's blood or excreta, usually a difficult task, or the indirect method of determining the existence of antibody to typhoid in the patient's serum. For the latter procedure we may do the well-known Widal test, or resort to the complement-fixation test, which is somewhat as follows: In a test-tube which we will call tube No. 1, we place a suitable amount of the serum to be tested and of an extract of typhoid bacilli. Next we add a small quantity of fresh guinea-pig serum as complement. If the complement in this guinea-pig serum is absorbed, we can tell that the patient was suffering from typhoid and that an antibody to the typhoid bacillus had formed in his serum, otherwise the complement would remain free, for it is bound only where the serum is specifically immune to the organism present. But there is nothing in the appearance of the fluids in the test-tube to indicate what has taken place; how are we to prove that complement has been absorbed? For this we use, as an indicator, an immune reaction which also requires complement for its fulfillment, but which is easily visible to the naked eye—namely, hemolysis. A rabbit is injected repeatedly with increasing quantities of sheep blood from which the serum has been washed and the corpuscles suspended in physiological salt solution. As a result of this there is generated in the serum of the rabbit an antibody for sheep red-blood cells—a fact which can be demonstrated by bringing the two together, when the suspension of sheep erythrocytes will change in appearance from a bright, opaque red to a clear, transparent cherry color, due to the destruction of the corpuscles and the liberation of their hemoglobin. A small quantity of this rabbit's serum is heated to drive off its complement and placed in a test-tube, which we will call tube No. 2, together with a suspension of sheep red-blood-cells. This gives the potential for hemolysis, complement alone being needed. If the contents of tube No. 1 be added to that of tube No. 2 and hemolysis occurs in the latter, it indicates that free complement existed in tube No. 1 and means that the patient's serum did not contain typhoid antibody. On the other hand, if

hemolysis does not occur, we can say that typhoid antibody did exist in the patient's serum and, acting specifically on the extract of typhoid bacilli, caused the absorption of complement. This is known as the complement-fixation or complement-absorption test.

In syphilis, however, we deal with an organism which has not been cultivated and concerning whose very morphology we are not yet clear. In 1906, Wassermann, Neisser and Bruck[2] published their method of using the complement-fixation test in the diagnosis of syphilis. For an analogue of the extract of typhoid bacilli they used a watery extract of the liver and spleen of a syphilitic fœtus, after first ascertaining by smears that the organs contained large numbers of spirochætes. They added to this the heated serum of a syphilitic and found that complement was absorbed. Conversely, when they used serum from a person who did not have syphilis, complement was not absorbed. Later in the same year Wassermann and Plaut[3] performed the test in general paralysis and tabes, using, instead of the blood-serum, the cerebrospinal fluid. They obtained the same results as with syphilitic serum, with the same negative controls. The blood serum in these diseases also sometimes gave positive reaction but in a very much smaller per cent than the spinal fluid. Thus it appeared that we were about to be given a new diagnostic criterion for general paralysis and a proof of its specific relationship to syphilis.

It was soon found, however, by other investigators, that an extract from normal livers could be used just as satisfactorily as that from syphilitic organs and that an alcoholic extract did quite as well as a watery one. So it is now known that the presence of syphilitic organisms in the Wassermann extract had nothing to do with the reaction, but that the latter depended upon certain lipoid bodies which are abundant in the liver.

Although the specificity of one element in this so-called Wassermann reaction has been thus exploded, the test remains a valuable one, for a very high percentage of blood-sera from syphilis and spinal fluids from metasyphilitic diseases evince this peculiar property of absorbing complement in the presence of lipoids, while sera and spinal fluids from other disorders are practically always negative in this regard. The sharing of this characteristic by that group of disorders is significant of their relationship.

The technique of the Wassermann reaction as applied to the cerebro-spinal fluid consists in placing a certain quantity (.1 — .2 cc.) of the specimen to be tested in a tube and adding to it the proper amount (1 cc.) of extract of syphilitic or normal organs. 1 cc. of a 10 per cent solution of complement in the shape of guinea-pig serum is then added and the whole incubated at 37 C. for 30 minutes to give time for the complement to be bound. Then the hemolytic system, consisting of 1 cc. of a 5 per cent suspension of red-blood-cells of a sheep and two units, or twice the quantity necessary for complete hemolysis, of the heated serum of a rabbit immunized to sheep erythrocytes, is added. This rabbit serum will cause hemolysis of the sheep blood-cells if there is free complement in the tube, so the tube is again placed in the oven and observed at frequent intervals for several hours. If hemolysis occurs it shows that complement was not bound by the first ingredients and constitutes a negative reaction. The non-occurrence, or blocking, of hemolysis similarly would constitute a positive reaction, since it indicates that complement was absorbed in the first instance. Numerous controls are of course set out for each test.

It will be seen that the process is a laborious one, necessitating as it does the immunizing and bleeding of animals, the making of extracts of organs, the washing of blood-cells, etc. One of the chief objections is that the ingredients are used in a fluid form. In this state they deteriorate steadily and have to be standardized, itself a time-consuming procedure, at nearly every series of experiments. In short, the test was possible only in a well-equipped laboratory and by trained workers.

After a series of experiments, Noguchi[4] of Rockefeller Institute, has succeeded in so modifying and simplifying the technique that it bids fair to become almost a bed-side test. In the first place, he substituted for sheep blood in the hemolytic system, the blood from a human being. Thus, instead of requiring fresh sheep blood for each repetition, it is only necessary to prick the ear or finger of some individual who is known to be free from syphilis, let a few drops fall into a small tube of physiological salt solution, and we have our blood suspension. For the other components in the reaction he has succeeded in impregnating absorbent paper with the liver extract, with the serum of the rabbit which was immunized to human blood and with fresh guinea-pig serum or complement.

Complement, especially, is very unstable and is active only for about three days in the fluid state, while when dried on paper it will retain its strength for months. These various papers are standardized in the laboratory so that small squares of certain dimensions represent, each, the required dose of that particular solution in the test. In paper form the substances will keep for long periods and, of course, are infinitely easier of manipulation. The substitution of the anti-human for the anti-sheep hemolytic system is a great advantage in that it does away with the difficulty which often arises from the presence in human blood-serum of a natural hemolysin for sheep blood.

The possibility of preparing this paper form of the various components in the Wassermann reaction in large laboratories by pharmaceutical houses and its distribution by them, is apparent, and an extremely valuable diagnostic test for syphilis and general paralysis may thus be brought within the reach of any practising physician who possesses a little technical skill.

With regard to the reliability of this reaction in the diagnosis of general paralysis, there have been some widely varying results by different workers. The majority, however, attest to its occurrence in from 60 to 75 per cent of all cases of that disease. In a communication about to be published, Noguchi and the writer have compared the Wassermann reaction with the butyric and other tests as applied to the spinal fluid. The Wassermann reaction, while not giving as high a percentage of positive results as the butyric acid reaction and the cell-count, is of undoubted value, and by eliminating some of the opportunities for error which now exist its efficiency will be much increased. In the series just mentioned, which consisted of about 200 cases, the Wassermann reaction gave 73 per cent of positive findings in general paralysis against 90 per cent which showed the butyric acid reaction and increased cell-content. A negative Wassermann reaction, then, is relatively of much less significance than the other tests, and doubtful reactions are very common. But a definitely positive result can be accepted without much question as meaning a syphilitic or metasyphilitic disorder of the central nervous system. Even in cases of acute inflammatory disease of the meninges in which the proteid and cell-content are very high, the Wassermann reaction is always negative. In two cases of psychoses other than general

paralysis a positive reaction was obtained, but syphilis could not be excluded in their histories. Only four cases of spinal fluid from active lues without nervous involvement were examined, but all were negative. A certain number of such cases, however, have been found in the experience of others to give positive results, and this opens the question of whether these are the persons who, in later life, are prone to develop general paralysis. If such cases could be followed it would help much to clear up the subject of whether the nervous system is invaded at the time of the luetic attack or is subsequently involved.

We may conclude, then, that in general paralysis and tabes, and in lues of the central nervous system, there exists in the cerebro-spinal fluid, besides an increase in cells and proteids, a characteristic which enables it to bind complement in the presence of certain lipoids. That this property is possessed also by syphilitic serum but appears to be absent in other conditions. That the detection of this substance not only aids in the diagnosis of general paralysis, but also is strong presumptive evidence of the relationship of this disease to syphilis.

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## DISCUSSION.

Dr. Southard.—Dr. J. G. FitzGerald, of the Laboratory of Serum Diagnosis, Department of Pathology, Harvard Medical School, Boston, sent to me his results with Danvers cases. They are quite consistent with the results just presented. We have not employed the method at Danvers for the sake of establishing general statistics, but mainly for establishing diagnoses and for comparing methods. FitzGerald's report included 52 tests. Fifteen out of 16 general paretics (93 per cent) were positive. My own post-mortem data give a positive (histological) diagnosis in about 90 per cent of cases clinically diagnosed general paresis (errors in clinical diagnosis were in cases of cerebellar arteriosclerosis). FitzGerald's note (printed below) speaks of the negative character of certain controls. He

speaks of the Noguchi globulin method and the modifications of Gay and FitzGerald for the detection of euglobulin.

It would be very desirable if certain cases, particularly those in private practice, could be followed with respect to variations in cytology and the Wasserman reaction in the cerebrospinal fluid over a period of months.

Other points are found in FitzGerald's note, which see below:

## Note on the Wasserman Reaction at the Danvers Insane Hospital by J. G. FitzGerald.

In 16 cases of general paresis at Danvers in which the cerebrospinal fluid was examined 15 gave a positive Wasserman reaction, one negative, a percentage of 93 per cent. In six of these both blood and cerebrospinal fluid were examined, four being positive. In 15 controls including cases of dementia præcox, manic-depressive, idiocy, epilepsy, alcoholic pseudoparesis, morphinism and amentia, none gave a positive reaction. No history of syphilis could be determined in any of the controls. In all but one case of general paresis a definite history of syphilis was known to exist: in this one case a positive Wasserman was obtained. In four cases of organic dementia in which syphilis was believed to have been the etiological agent none gave a positive Wasserman reaction; all, however, showed a positive reaction when tested by the Noguchi globulin or the modified (Gay and FitzGerald euglobulin methods. In two cases of "moral degeneracy"(?) in which a positive syphilitic history was given, one gave a positive Wasserman reaction and one a negative: both gave the modified euglobin reaction. In five cases of general paresis in which the clinical course has been unusual, and about which some uncertainty exists, four gave a negative result with the Wasserman, but were positive with the euglobulin method. In three of these five cases no definite luetic history could be ascertained and they are not included in the first group of cases analyzed on that account. The euglobulin method gives a positive result in any case in which there is meningeal irritation, but as the meningitides are not likely to be confounded with general paresis this is not a serious objection to the usefulness of the method in aiding the psychiatrist to arrive at a definite conclusion in regard to his case. In one case of juvenile general paresis a positive Wasserman was obtained, and in one case of alcoholic pseudoparesis, in which it was almost impossible to determine clinically the exact condition, a negative Wasserman and euglobulin test served to render the diagnosis certain. The earlier work of Wasserman and Plaut and others has been amply confirmed and no doubt exists as to the value of the Wasserman reaction as an aid to psychiatric diagnosis. In laboratories where more limited facilities exist, the simpler euglobulin method has a field of usefulness. The Wasserman method has been controlled by the examination of blood and cerebrospinal fluid from a great variety of cases, in this laboratory, and a positive result has never been obtained where syphilis was known not to

have been present. The work of other observers who obtained positive results in scarlet fever, late tuberculosis, etc., must, therefore, be regarded as doubtful.

LIST OF CEREBROSPINAL FLUIDS AND BLOOD SERUM EXAMINED FOR THE SYPHILIS REACTION IN 1908-1909.

| Clin. No. | Sex. | Clinical Diagnosis. | (1) Wasserman Neisser Bruck, 1906. | (2) Noguchi 1909. | (3) Noguchi Globulin increase 1908. | (4) Gay and Fitzgerald Euglobulin inc. 1908. |
|---|---|---|---|---|---|---|
| | | CEREBROSPINAL FLUID. | | | | |
| 14,309 | M | Idiocy ..... | o | | ? | |
| 12,269 | M | Cerebral lues..... | o<br>o | | + | |
| 14,321 | M | G. P. and syphilis.. | — | | + | |
| 13,742 | M | G. P. and syphilis.. | + | | + | |
| 14,026 | M | G. P. and syphilis.. | + | | + | |
| 14,326 | M | G. P. and syphilis.. | + | | + | |
| 14,253 | M | G. P. organic dementia. Lues 43 years ago..... | o<br>o | o<br>o | + | |
| 10,572 | M | ? organic dementia. Lues ?..... | o | | o<br>+ | |
| H. F. | M | G. P. Lues +..... | + | | + | |
| 13,526 | F | G. P. ? Lues ?... | o<br>o | | + | |
| 13,501 | F | G. P. Lues ?..... | + | | + | |
| 14,698 | M | G. P. Lues +..... | + | | + | |
| 14,121 | M | Dementia. Lues o. | o | | | |
| 13,904 | M | Juvenile G. P. Lues. + ?..... | + | | + | |
| 14,157 | M | G. P. Lues +..... | + | | + | |
| 14,071 | M | G. P. Lues +..... | + | + | + | |
| 14,530 | M | Lues ?..... | | | + | |
| | | BLOOD. | | | | |
| 13,262 | F | Central neuritis. Lues o..... | o | | o | |
| 12,982 | M | D. P. Lues o..... | o | | o | |
| 10,880 | M | D. P. Lues o..... | o | | o | |
| 12,979 | F | G. P. Lues ?..... | o | | o | o |
| 14,358 | F | Alcoholic pseudoparesis. Lues ?. | o | | o | o |
| 14,423 | M | Morphinism. Lues o | o | | o | o |
| 13,720 | M | Organic dementia. Lues +..... | o | | + | + |

| Clin. No. | Sex. | Clinical Diagnosis. | (1) Wasserman Neisser Bruck, 1906. | (2) Noguchi 1909. | (3) Noguchi Globulin increase 1908. | (4) Gay and Fitzgerald Euglobulin inc. 1908. |
|---|---|---|---|---|---|---|
| | | | BLOOD. | | | |
| 10,767 | M | M. D. Lues o..... | o | | o | o |
| 13,171 | F | M. D. Lues o..... | o | | o | o |
| 14,264 | F | Syphilis. Lues +.. | o o | | + | + |
| 12,544 | F | Syphilis. Lues +.. | + | | + | |
| 14,191 | F | D. P. Lues o..... | o | | o | |
| 13,703 | F | D. P. Lues o..... | o | | o | |
| 14,320 | F | D. P. Lues o..... | o | | o | |
| 13,549 | F | G. P. Lues ?..... | o o | | ? | + |
| 5,249 | F | D. P. Lues o..... | o | | ? | o |
| 14,516 | M | G. P. Lues ?..... | o | | ? | + |
| 11,186 | M | G. P. Lues ?..... | o | | + | ++ |
| 14,228 | M | G. P. Lues + ?... | o o | | ? | + |
| 12,970 | M | G. P. ? Lues +.... | o o | | ? | o |
| 13,512 | M | G. P. Lues +..... | + | | ? | ++ |
| 11,559 | M | G. P. Organic dementia ? Lues ? | o | | + | + |
| 14,544 | M | Syphilitic dementia. Lues +..... | o | | + | + |
| 14,722 | M | Organic dementia. Lues ..... | o | | + | ++ |
| 13,493 | M | D. P. Lues o..... | o | | o | |
| 14,086 | M | D. P. Lues o..... | o | | o | |
| 14,569 | M | Epilepsy. Lues o.. | o | | | |
| 14,071 | M | G. P. Lues +..... | + | | + | |
| 10,572 | M | Lues ?..... | o | — | o | o |
| 13,742 | M | Lues +..... | o o | | + | + |
| 14,326 | M | Lues +..... | + | | + | + |
| 14,026 | M | Lues +..... | + | | + | + |
| 14,157 | M | G. P. Lues ?..... | o | | o | o |
| H. F. | M | Lues +..... | + | | o | ? |
| C. C. | M | G. P. Lues +..... | + | | | + |

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I learn that it has been found at the Rockefeller Institute for Medical Research that serum from cases of leprosy very often gives a strong positive reaction when tested either by means of Wasserman's original method or by means of Noguchi's modification of that method. Fairly marked positive reactions are also obtained in cases of carcinoma, malaria and scarlet fever. The reaction is, therefore, not strictly specific, but in the absence of these conditions it may be regarded as pointing to syphilis.

# A REVIEW OF THE RECENT STUDIES OF GENERAL PARESIS.

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Perhaps nowhere within the wide domain of psychiatry have greater advances been made within the last few years than in our knowledge of general paresis. It constitutes at the present time practically the only psychosis which is accompanied by well-defined characteristic pathological changes which render post-mortem demonstration and diagnosis possible. The gross changes found at autopsy, the thickening and adhesions of the dura, the occasional hemorrhagic membranes and exudates, the excess of cerebro-spinal fluid, the lepto-meningitis with adhesions, the regional atrophies and softenings, the diminished brain weight and the granulations in the ventricles are of themselves usually sufficient for diagnosis. The histological changes which take place have until recently been very vaguely and inadequately described.

For our present comprehensive knowledge of the pathology of paresis we are largely indebted to the exhaustive researches of Nissl and Alzheimer. The latter has laid particular emphasis on the importance of plasma cells in the pia and vessel walls. The pia-arachnoid is always extensively infiltrated by plasma cells and lymphocytes, and shows occasional mast cells. The plasma cells are small and rounded or oval, with usually one and sometimes numerous nuclei. They are specially susceptible to degenerative changes, characterized by vacuolization, with the absorption at times of foreign substances, changes which cause them to resemble granule or waste product cells. Plasma cells are also found in brain syphilis, in tubercular meningitis, in carcinomatous and sarcomatous processes and in encephalitis,—due to lead and other poisons, as well as in idiocy and epilepsy. They occur so much more extensively, however, in paresis as to render a diagnosis comparatively easy, the other conditions in which they occur being excluded by pathological as well as clinical considerations. The presence of plasma cells is readily confirmed by selective stains which have been devised by Unna and Pappenheim. The char-

acteristic meningeal infiltration, although present in practically all areas of the brain, is more marked in the frontal lobes.

In the cortex the vessels seem to be greatly increased in number and show well-marked changes. Aside from an intimal proliferation and a budding of capillaries, there is nearly always an extensive infiltration of the adventitia by plasma cells, lymphocytes, some polynuclear and occasional mast cells. The plasma cells are usually very numerous. Their origin is questionable at the present time. In the superficial layer of the cortex there is almost always an increase of the neuroglia fibrils with numerous spider cells showing eccentric nuclei and large cell bodies. Anglade and Letreille [1] by means of a special stain have shown a conspicuous increase in neuroglia in the molecular layer of the cerebellar cortex. Rod-shaped cells, or " Stabchenzellen " as described by Nissl, with a long nucleus and only slight evidences of a cell body, are very common and seem to have some relation to the severity of the process. Satellite cells and " free nuclei " are often seen in the vicinity of the neurones. The nerve cells are frequently diminished in number in occasional areas with a proliferation of the glia. The definite changes in the neurones which have been described as acute alteration, grave alteration, rarefaction, shrinkage, sclerosis and pigment degeneration are all found in general paresis, but are not pathognomonic of the disease. Many cells are normal and some present the change known as axonal alteration. The cells appear to point in all directions, and there is often an obvious disturbance of the normal layering of the cortex. Areas of softening are often found, but Nissl denies the presence of gummata in paresis. Degeneration of the nerve fibres is shown early in the pyramidal layers and occurs later in the association and projection fields. The various lesions found in the cortex are shown to varying extents in the cord.

The etiology of general paresis has proven as interesting a field of research for recent investigators as that of pathology. The bacterial origin of the disease as advocated by Ford Robertson [2] had led to considerable discussion at times. In cultures from the mucous membrane of the stomach and intestines, from the respiratory tract and brains of paretics, he isolated an organism in 1903 which morphologically resembles the Klebs-Löffler bacillus. It was found oftener and more extensively than in genuine cases of

diphtheria and was not affected by antitoxin treatment. This has been referred to since as the "bacillus paralyticans." On feeding rats for several weeks with broth cultures of this organism he claims to have found an infiltration of the pia-arachnoid, a proliferation of the neuroglia cells, periarteritis and a degeneration of the nerve cells. In 1907, Robertson stated that the bacillus described "plays the chief part in the product of the toxæmia of general paresis," and reported several cases in which he claimed to have obtained excellent results from the use of anti-bacterial serum prepared in sheep by immunization with the special diphtheroid bacilli. His conclusions have not been generally accepted and the bacillus paralyticans has not been recognized by other pathologists as a factor in the etiology of paresis.

Fairbanks of Boston in 1908[3] reviewed 29 published cases of paresis occurring in children between the ages of 10 and 14 years, the diagnosis having been confirmed in each case by autopsy. Twelve of these cases showed specific stigmata. In 19 cases one or both of the parents presented syphilitic stigmata, or had a definite history of general paresis or syphilis. Of the other 10 cases one had an insane father with syphilitic children, one had several insane relatives, one had normal parents with four other syphilitic children, one had normal parents with one child hydrocephalic and the second and third children still born, one had a brother with evidences of syphilis, two had negative and three unknown histories. He concludes that the infantile cases, which usually have a history of congenital syphilis, point to a specific origin of paresis, and discredit alcohol and other ascribed causes as etiological factors.

The study of the cerebro-spinal fluid by Widal, Sicard and Ravaut, following the introduction of lumbar puncture by Quincke in 1890, has led to interesting results, which have had an important bearing on psychiatry. It was soon found that there was a great increase in the number of lymphocytes in tubercular meningitis, tabes, cerebral syphilis and general paresis. The value of this method of differentiating paresis from other psychoses is readily apparent, and it is at present the most reliable diagnostic procedure available in doubtful cases. The technique is simple and has recently been improved by Alzheimer so that the sediment, after centrifuging the cerebro-spinal fluid, is imbedded in paraf-

fine, thus permitting much more accurate staining methods. A lymphocytosis is almost universally demonstrable in cases of general paresis. The increased amount of albumen is constant but not of equal importance in diagnosis.

The relation of syphilis to paresis has always been a debated point. According to Paton, Gudden found a definite history of syphilis in 35.7 per cent of his cases, Hirsch in 56 per cent, Jolly in 69 per cent, Mendel in 75 per cent and Alzheimer in 90 per cent. A history of syphilis or evidence of that disease is so often found that I think it safe to say that the majority of observers consider it to be a necessary etiological factor. When the spirochæta pallida was discovered it was hoped that some definite connection between syphilis and paresis could be conclusively demonstrated. Unfortunately this has not been possible and all efforts to isolate the organism in the cerebro-spinal fluid of paretics have failed. A more thorough knowledge of the spirochæta may result in more light on the subject.

A decided step towards the solution of the problem was rendered possible by the application of the principles of the Bordet-Gengou phenomenon,[4] complement fixation in serum diagnosis, to the study of syphilis by Wassermann, Neisser and Bruck in 1906.[5] Serum diagnosis is now thoroughly established and it has been of great value in the study of parasyphilitic diseases in general and paresis in particular. Lesser[6] states that positive reactions are obtained in all cases of paresis. More recent examinations show positive results in over 90 per cent of cases. Marie and Levaditi report similar results. Raviart,[7] after 400 tests in the insane, found positive reactions in paretics with practically no exceptions. The Wassermann reaction would appear to have removed all doubt as to the definite relation between paresis and syphilis.

Efforts to arrive at a simpler method of diagnosis in syphilis and general paresis have resulted in the so-called precipitate reactions. Porges and Meier discovered that a precipitate was formed by the mixture of a .2 per cent lecithin suspension and serum from a syphilitic patient. It was soon found that a similar reaction took place on the addition of solutions of glycocholate or taurocholate of sodium to luetic sera. The lecithin suspension is made by heating .1 gramme of lecithin in a sufficient amount of alcohol to dissolve it, after which enough distilled water is added to make 50 cc. Glycocholate and taurocholate of sodium are each made up in

a 1 per cent solution in distilled water. Equal parts of the serum to be examined and one of the solutions described are allowed to stand for 24 hours in a test tube at the ordinary room temperature. At the end of 15 or 20 hours a precipitate will form in positive cases, varying from a slight flocculence in the upper part of the mixture to a heavy deposit at the bottom of the tube. It becomes quite conspicuous on tapping or lightly shaking the test tube. In some cases it forms more quickly, but should be found in 24 hours at most. Opalescence or turbidity is not sufficient for a diagnosis. The solution should be prepared just before use. Blood serum, either active or inactivated, has usually been used. In the study of syphilitic sera, Butler[8] has found these tests inferior to the Wassermann reaction. Noguchi[9] has found a definite increase of the globulin content in syphilic sera. This is demonstrated as follows: To .1 cc. of spinal fluid add .5 cc. of 10 per cent butyric acid and heat. Then add .1 cc. of a normal solution of sodium hydroxide and reheat briefly. In spinal fluid in cases of general paresis a flocculent precipitate appears. An opalescence is not sufficient. The reaction should take place within two or three hours. Noguchi[9] says in regard to the amounts used in the test, "It is entirely to one's individual taste whether one or a multiple of the quantities indicated above will have to be employed." I have found that in using larger quantities (.5 cc. of spinal fluid, 2.5 cc. of 10 per cent butyric acid and .5 cc. of normal sodium hydroxide) a decided flocculent precipitate is formed in many cases when only a slight or no indication of a precipitate is obtained in using the smaller amounts proposed by Noguchi.

In fluids from cases of general paresis 29 out of 30 examined showed a lymphocytosis; 25 out of 28 gave a positive butyric acid reaction; 17 out of 20 were positive to the glycocholate of sodium; 13 out of 16 to the taurocholate of sodium and 9 which were tested with lecithin all reacted. Six doubtful cases were examined. Of these none showed an increase of lymphocytes, four were positive to the butyric acid test, five to the glycocholate of sodium and five to the taurocholate of sodium. Three of these were tried with lecithin and all reacted. In the non-paretic cases the butyric acid test gave 14 positive and 11 negative reactions. None of the positive cases had a definite history of syphilis: two of the negative cases are known to have had syphilis. Of the 11 negative

cases two cases of dementia præcox, one of alcoholism, one of locomotor ataxia, one of manic-depressive insanity, one of brain tumor and one of epileptic insanity gave a heavy flocculent precipitate after standing from 14 to 18 hours. Two cases of undoubted general paresis reacted only after standing 24 hours. In one case of senility, one of dementia præcox, one of alcoholism, one of epileptic insanity and one of an undistinguished depression, the cerebro-spinal fluid gave a positive butyric acid reaction and a marked lymphocytosis on examination 12 hours after death. In none of these cases was there a history of syphilis or a suspicion of paresis. The significance of a lymphocytosis in post-mortem fluid is not clear. In most of these fluids the sugar had entirely disappeared, although present during lifetime in practically all cases. Glycocholate of sodium was tried in 19 non-paretic cases with 18 positive results. Taurocholate of sodium was positive in 14 out of 15 and lecithin in 13 out of 14 non-paretic cases. The number of positive reactions obtained in non-syphilitic cases would indicate that the precipitate tests cannot properly be considered as specific for either general paresis or syphilis.

To recapitulate briefly, the points I have endeavored to bring out in this paper are the following:

1. The recent researches of Nissl and Alzheimer have resulted in a comprehensive and definite knowledge of the pathological changes which characterize general paresis.

2. Careful investigation has failed to show any definite relation between paresis and the diphtheroid bacillus of Ford Robertson.

3. A lymphocytosis has been definitely established in the cerebro-spinal fluid of paretics and is probably the most reliable diagnostic indication in doubtful cases at the present time.

4. The Wassermann reaction has practically removed all doubt as to the definite relation between paresis and syphilis, although the spirochæta pallida has not yet been demonstrated in the presence of general paresis.

5. While the globulin content of the cerebro-spinal fluid is undoubtedly increased in paresis it does not seem to furnish a basis for a positive diagnosis.

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## DISCUSSION.

Dr. Rosanoff.—I would like to say a few words. We have been carrying on an investigation in 24 cases. Each specimen of the fluid we removed is examined microscopically for the existence of lymphocytosis. It is examined by the Wasserman test or Dr. Noguchi's modification of the Wasserman test, and also by the butyric acid test, and we decide a case is general paresis when we find either on the first puncture or the second the presence of lymphocytosis. Further, we have performed the same test in other cases, particularly in a large number of cases of epilepsy. I do not remember the number of cases, but I think 30, and in quite a number of cases of dementia præcox, and we have never found the butyric acid reaction positive except when the cerebro-spinal fluid was contaminated with blood. Even a slight contamination gives of course a positive reaction. We called those cases unascertained, but with that exception we found the test reliable.

In general paresis in almost all cases a positive reaction by means of the butyric acid test can be obtained, and in other psychoses no such reaction can be obtained. We had one case in which the cerebro-spinal fluid, as well as the blood, shows the Wasserman test. This case is one of a recent infection with syphilis.

Dr. Noguchi is not certain whether this test indicates the presence of globulin or of nuclear proteid. Of course we are also as yet unable to clear up that particular point.

Dr. Hill.—I think the Doctor's paper is along the right line. It is only by such scientific investigations that we can reach the absolute pathology of those diseases and to make from that the ultimate diagnosis. I have been struck very often with the ambiguity in the diagnosis of paresis. In one institution, which has less than a thousand patients, there will be a very large number of paretics, and in another there will be a very small percentage. I cannot believe that the difference in environment will account for this discrepancy. I am satisfied from my own personal observation that it is a matter of diagnosis. There are no cut and dried lines in the diagnosis of paresis.

Now I have been subjecting our patients through the whole institution to the Wasserman test, and our observations have been a little different than we expected. There have been many surprises. Thus far in our paretics only 50 per cent of them have shown a positive Wasserman test, cases that we have probably been calling paretics, that we supposed to be syphilitic in character, and so have placed them in the category of some other form of

insanity of syphilitic origin, and assumed it was merely the fact that the resemblance was due to paresis, was due to the fact that syphilis had affected the cortex. Then again in locomotor ataxia our results have been about the same.

There are just 50 per cent exactly of our cases of locomotor ataxia that responded to the Wasserman test. I believe that there is a specific locomotor ataxia infection. I believe by such investigations as Dr. May has been carrying on we will prove some day that there is a syphilitic infection which produces locomotor ataxia, and another infection which produces a very good imitation of it. I believe that there is such a specific infection and I have looked with a great deal of satisfaction on work of this character. I believe yet we will find that there is a specific infection producing paresis; that there is a syphilitic infection producing a very good imitation of it. However, these investigations being made by the pathologists of this Association are to be commended. I personally always thank these gentlemen for the light they throw on these very important branches.

Sometime ago I proposed that at our meetings a prize be offered for the best article on original investigation on some special subject. It was received very kindly and very highly commended, but we have lost sight of it. These investigations require so much time and patience and research they should be rewarded by the Association, and others of the younger men should be stimulated to continue this line of work in our branch.

Dr. May.—I wish to disclaim any great orginality in this article. I have attempted to review some of the recent work in general paresis in order to bring it before the attention of others, so that it might receive possibly more consideration than it has heretofore. It seems to me that we have made more marked advances in the study of general paresis than in any of the other psychoses.

In regard to the Wasserman reaction, I touched upon that subject very lightly for the reason that Dr. Moore will present an interesting paper on that subject, at another time. My own experience is limited and has been along the lines of the Noguchi modification of the Wasserman. I have tried none of the other modifications.

In regard to the butyric acid reaction, I wish to call attention to the results obtained by using the same proportions, but larger amounts of the different fluids suggested by Dr. Noguchi because I noticed that there was a marked difference. He based his reaction on a definite quantity of the fluids used, and in cases of paresis a positive reaction was shown beyond the shadow of a doubt, but in my work I found a great many cases of non-paretic origin which were negative with the quantities originally used, but which gave a positive reaction on using larger amounts of the same reagents.

Our observations would lead us to believe that there is an increase in globulin in cases which are not paretic. This increase has been shown in so many cases that many of the members of our staff have ceased to attach any importance to it.

# NOTES ON THE TREATMENT OF ACUTE INSANITY.

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So far as its treatment is concerned acute insanity may be defined as a disease which impairs or destroys the patient's capacity to co-operate with, and indeed not infrequently prompts him to vigorously oppose, those who seek to institute measures intended to promote his cure or comfort; it also disqualifies him from conforming to the conventionalities of social, civil or family life so that some special provisions have to be made for his proper care throughout the course of his disorder; practically this usually requires the exercise of such arbitrary authority as can best be applied in an establishment specially equipped for the purpose. In reference to their treatment, patients suffering from acute insanity may be divided into two classes. In the first may be included those in whom there is a morbid excess of bodily and mental activity and in the second those in whom there is a pathologic deficit in these particulars. The former may be boisterous, boastful, blasphemous, obscene, violent and homicidal, the latter apprehensive, silent, hopeless to the point of despair and suicidal. These two characteristics may alternate, if indeed they be not occasionally combined in the same individual. Either excessive or defective activity may be so pronounced, accompanied as they frequently are with persistent refusal of food and insomnia, as to excite serious apprehension of fatal exhaustion.

Acute insanity, aside from that which accompanies general paresis or those cases which from the first show pronounced signs of mental deterioration, tends strongly toward recovery, and the indications for treatment are, therefore, to assist and not retard nature in her restorative efforts.

Treatment in most cases of acute insanity can only properly be carried out in an institution specially adapted to that purpose, and what I have to say is intended to apply to measures therein employed.

First, cases presenting excessive activity may be considered. It is always desirable that every patient should be treated individ-

ually; for instance if he be noisy he should not be stupefied with drugs because his noise disturbs others; unless, however, special provisions are at hand for his isolation, or perhaps more properly, insulation so far as any noise he may make is concerned, application of the principle of the greatest good to the greatest number may prevail and the individual suffer accordingly. Indeed I may now state that *the main purpose of my remarks is first to call attention to the importance of having such provisions in institutions for the treatment of insanity as will permit the physician to refrain from administering sedative drugs except only when he believes they will benefit the patient to whom they are administered,* with practical suggestions for the accomplishment of this object; and *second, to emphasize the importance of the fresh-air treatment of acute insanity,* with hints as to how this also may be carried out in practice. That fresh air is highly beneficial to persons suffering from tuberculosis has been clearly understood for many generations, and no doubt a few physicians have individually made some special provisions for having their patients kept much in the open air. But it has only been in the last decade or thereabout that a well-defined fresh-air method of treatment has been developed and come to be pretty generally understood and made use of; so, too, doubtless individuals have appreciated the value of the principles herein brought forward in reference to the insane and embodied them in practice.

I think them so important, however, that I should like to see their value generally recognized and methods for their practical application perfected and adopted.

Many cases of the active variety of acute insanity are very noisy and wakeful, especially in the early days or weeks of their attack. Certainly sometimes, if not generally, it happens at the expiration of any definite period, as, say, a week, the patient's physical condition will be far better if sedative drugs are withheld than it will be if the physiological effect of these be maintained. For such patients a room of ample size should be provided, with thick, deadened walls, double doors and windows; this room should be supplied with forced ventilation so as to keep the air strictly fresh even when one or more persons have to remain in it. In the country where there are no trees or adjacent tall buildings to deflect air currents, the rooms of an institution may be

satisfactorily ventilated by the gravity system by using the basement as an air chamber and providing each room with an independent inlet and outlet flue. These rooms, however, which are devoted to the care of noisy patients and, therefore, have to be kept closed, especially in the summer months when a gravity system is inactive, should be supplied with noiseless electric fans in the outlet flue. In such a room, 15 x 12 x 11, so equipped, occupied by two nurses and a patient, the air remains perfectly fresh. I have had such rooms at my disposal now for nearly four years and have come to regard them as almost indispensable in the treatment of certain cases of acute insanity. Incidentally I would suggest that the plan here outlined of supplying an abundance of fresh air is equal or superior to the so-called outdoor treatment in cases of pneumonia, as it involves no increased liability to exposure either of patient or nurse. My experience happily is limited to one case which occurred in a woman of thirty-eight, who made a good recovery while suffering from a very severe attack of acute mania.

The value of keeping a patient in the open air as a means of promoting his physical vigor, sleep, appetite and digestion has been amply demonstrated in the last ten years in the treatment of tuberculosis, and this is of course desirable in all cases of acute insanity, though some are so noisy and unmanageable that it is not practicable to keep them much out of doors. For those patients who are orderly enough to properly permit them to remain out of doors I have found open pavilions facing south, with concrete floors and concrete walks leading to them, well suited for this purpose. They are always dry and, therefore, always available. They may be supplied with comfortable lounges, and in the winter foot-warmers with a fuel cartridge may be used to supply necessary heat. It would, in my opinion, rarely be advisable to attempt to have cases of acute insanity sleep out of doors, as their co-operation could not be counted on to prevent dangerous exposure even if they were not noisy.

While I believe the measures above outlined have a very wide application in the treatment of acute insanity, indeed are of cardinal importance, I do not wish to be understood as intending to maintain that sedatives, hypnotics and hydrotherapy are not useful. In regard to the latter I wish to say, however, that while some form of it may be employed in many cases with marked benefit, its value

by no means justifies the advocacy it has received in some quarters in the last few years as a sort of cure-all, nor the expenditure of huge sums for the installation of elaborate plumbing which has been made in various public institutions throughout the country. Nevertheless, I maintain anyone who studies his cases closely and has at his disposal such provisions as I have described will, I believe, carry some of them at least through to convalescence without the employment of any medicinal sedative, hypnotic or even tonic, or at any rate he is likely to become more and more abstemious in the matter of prescribing medicinal sedatives and hypnotics. A pretty wide experience with both methods has convinced me, as I have said before, that in most cases of acute insanity when insomnia is pronounced the patient's condition is likely to be far more satisfactory, at the end of a stated period, if medicinal hypnotics and sedatives are entirely withheld than if they are freely administered. The disease generally runs a course of several months, and the secretions and consequently the metabolic processes are often profoundly deranged by an attempt to maintain medicinal sedation over so long a period. Indeed it is not difficult to conceive how occasionally such medication might determine a fatal issue or, worse, permanent mental impairment in a case otherwise curable. Finally I wish to remark emphatically that an establishment adapted to the treatment of acute insanity should have rooms measurably impervious to noise and equipped with efficient forced ventilation. It should also be supplied with open pavilions or porches so as to enable certain patients to spend their days wholly in the open air. I believe the medical profession should advocate the installation of accommodations and appliances suitable to the practical application of the principles above described in public institutions devoted to the treatment of acute insanity.

## DISCUSSION.

Dr. Hutchings.—I would like to add a word of approval to what Dr. Brown has said about the importance of fresh air in the treatment of some acute conditions met with in the insane, also in combating anæmia and loss of appetite which we meet with in depressions.

At Ogdensburg we have used this out-of-door method of treatment very much as it is used in the Adirondacks since 1898, and have been very much

gratified with the results we have obtained in a number of cases. I do not quite see the necessity of the elaborate construction which the doctor recommends. Porches and rooms with windows open are available at all times of the year, and certainly with us, where the temperature is frequently below zero, and where we have on an average, including our tuberculosis pavilion, over a hundred patients out of doors every day in the winter, we have never had a case of frost-bite of serious degree, and we have had no difficulty in keeping patients comfortable.

I disagree with the doctor in his disregard of hydrotherapy. I know of no measure which gives such satisfactory results as the continuous bath, and it is used very largely and increasingly every year. The results we get from the continuous bath have made unnecessary the use of hypnotics or sedatives. There are also other forms of hydrotherapy which are useful in certain measures, but their general employment is not nearly so frequent with us as the continuous bath for excited patients.

Dr. Sanborn.—I was very glad to hear Dr. Brown speak of open-air treatment. The importance of it has been forcibly impressed upon my mind during the last four years. The marine service of the United States had some seventeen years prior to that time erected an adjunct to the marine hospitals in Penobscot Bay. At that time a large number of the army were sick, as I understand it, at New Orleans, and it suggested that they go up into Maine and erect an adjunct to the hospital service. For some cause or other it was never occupied except as I understand by the surgeons of the service who came there summers to take their vacations. The property was finally passed over, or offered to be passed over, to the State of Maine, provided the governor would see that it was used for charitable purposes, and in consultation with the trustees and myself, it was finally determined that it might be of most service to the two State institutions for the insane.

For four years now we have taken a colony of about sixty-five patients there, dividing the time between the sexes, the females remaining through June and July and the males the remaining two months. The other hospitals furnished about half as many more.

What I wish to emphasize particularly is this: The institution at Augusta, the first year, sent forty patients and they remained for two months. When they returned to the institution within a week I discharged eight out of those forty, who had made complete, vigorous and full recoveries. Our method there is the open-door treatment. The physician, one of my assistants who has been there four years in charge, can stand on the veranda of the building and scan the entire island, and with the supply of keep we have, our patients are allowed out in the open air continuously from early morning until the shades of evening. I have never seen the beneficial effects of keeping patients out throughout the day as I have during the past four years. Now those eight patients that I mentioned I expected to recover. They were all functional diseases, but they would not

have made that vigorous recovery if they had been kept in the hospital, and I want to say that not one of them has been returned to the institution.

Dr. Burr.—I suppose Dr. Sanger Brown would not wish to be understood as disparaging hydrotherapy, but as simply inveighing against the universal application of some particular form of it. I should regret to have him do so because in my experience it is one of the most valuable single therapeutic adjuncts we have, in a large number of cases. I understood him to mean that he would not discourage hydrotherapy, but he would discriminate in its application. By "hydrotherapy" we should understand the use of water in the treatment of the disease however simply or with however complicated apparatus it may be applied.

Dr. Packard.—There is no doubt that the recommendation Dr. Brown has considered in his paper ought to be in general use, and I think that already in many places such methods are in use. I should emphasize rather more strongly the usefulness of hydrotherapy. For many years it has been used at McLean to great advantage. In Munich the prolonged bath is extensively and profitably used, and there are some points in this connection that are worthy of notice. The bath rooms are large, light and airy, provided with windows such that patients can look out; in short, they are attractive rooms, so to speak, when contrasted with the ordinary bath room, with its small, high window, which is usually a place that one likes to get out of as soon as possible. These large rooms, and there are several of them in different parts of the hospital, usually contain four low-set tubs, of sufficient length to allow a patient to lie down. The tubs are filled from a mixer which makes it possible to keep the water at any given temperature. From one to four patients, with sufficient attendants to properly care for them, are turned loose in such a room practically naked. They are encouraged, but not forced, to get into the tubs. As a rule, the natural tendency of a maniacal patient to play in water results in the patients spending the greater part of their time in the water, now sitting up, now splashing the water about, now perhaps lying quietly for a while, occasionally jumping out and running about the room, but usually soon returning to the water. After varying lengths of time the patients tend to quiet down under this treatment, and as soon as they show any tendency to become sleepy or quiet they are taken to a nearby room, where they often fall asleep, and perhaps the excitement is broken. If not, they are returned to the baths. The liking which the patients have for this treatment is quite striking, and several times I have seen a maniacal patient shown in the amphitheater who continually clamored to be allowed to go back to his bath. You will at once appreciate that such a use of the prolonged bath is quite different from swathing an excited patient tightly in sheets and slinging him on a canvas in a tub, which seems to me to amount to the worst kind of restraint. Of course, certain very confused and weak patients are at times suspended in the tub, since their condition would not permit of other treatment.

Within the last year at McLean an addition has been made to the excited ward in which two bath rooms have been fitted up with these features especially in mind, and we are anticipating good results from their use.

Dr. Brush.—The effect of the open air in doing away with necessity of sedatives is well known. I think every one of us has had experience of the effect of the open air. I know I have and I have taken advantage of it in certain patients. There has hardly been a day this winter, even with snow on the ground, that we have not had patients out on the lawn done up in blankets, who much to my gratification have slept well all night and a great portion of the day to their obvious benefit.

Dr. Abbot.—I would like to emphasize one thing of which Dr. Brown spoke: That is not giving sedatives. I have seen patients in a general hospital who were, I think, drugged to death because so much sedatives was given to quiet them. I think one of the most important elements in the treatment of acute cases is abundant food, if the patient will take a sufficient amount of food it makes comparatively little difference whether he sleeps or not, but the food must be very abundant; if the patient is eating only a moderate amount of food, this must be supplemented by tube-feeding if the patient will not take it voluntarily. That is one of the essentials in the treatment of these acute disturbed cases.

Dr. Dewey.—In connection with the allusion made to the use in Kraepelin's clinic of the continuous bath, I am reminded of a little incident that illustrates what was said of its being almost a matter of course there. A medical friend of mine who was visiting the clinic with Kraepelin went in one morning, and in the bath room was a patient in the tub who had come in during the night, and Kraepelin made some inquiries about the patient of the assistant. The latter gave some particulars, but stated that his case had not been gone over thoroughly, and the question came up as to his being put into the tub, and the assistant replied, "I thought it was all right, doctor, the wards were quite full and we did not happen to have a bed, and he could rest in the tub equally well." The bath was almost a matter of course, and doubtless a most appropriate thing. I do not wish for a moment to disparage the use of the continuous bath, because I firmly believe in it and use it very considerably myself.

Dr. Brown.—I want to thank you gentlemen for the interest you have taken in the paper, rather more than I expected you would do. I was especially pleased with Doctor Hutchings' remarks. I think there is no one better able to speak on the importance of fresh air than he. Last year he read a better paper on "Tuberculosis in the Hospital for the Insane" than any I have seen on the subject since those investigations were made in the British Army thirty or forty years ago in which they came to the same

conclusions he did, that lack of ventilation was the main essential cause of tuberculosis.

I do not want to discuss hydrotherapy here. I approve of it heartily. I think it is one of the most valuable means we have in the treatment of certain cases of insanity. I really use it a great deal, but plead for forced ventilation in your bath rooms. Have fresh air everywhere, all you can get of it, and I still maintain that it has been constantly neglected by us, that is we have not advocated it enough. We have not appreciated it generally as we should have done and have not insisted upon it in the construction of State hospitals. It is a little better in the last few years than before, but even now very likely if you go to the most reputable practicing architects and want to have them prepare the plans for a hospital, if they put in any system of ventilation at all it will be a system all worked out very nicely on paper, and if you close all the doors and windows of the hospital and keep them closed it will work, but just as soon as you open two or three doors or windows somewhere, the whole system is thrown entirely out of commission.

# THE PRESENT STATUS OF WOMEN PHYSICIANS IN HOSPITALS FOR THE INSANE.

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To obtain accurate data as to the present standing of women physicians in hospitals for the insane, one hundred and seventy-five lists of queries, covering the various phases of this question, were sent to the superintendents of the hospitals for the insane throughout the United States and Canada. In reply to these, one hundred and ten answers were received, divided as follows:

| | |
|---|---|
| From State hospitals having more than one assistant physician | 79 |
| From State hospitals having only one assistant physician..... | 7 |
| From State hospitals exclusively for male patients..... | 2 |
| From private hospitals..... | 10 |
| From Canadian hospitals..... | 12 |

As the State hospitals having only one assistant physician and those exclusively for the care of male patients would naturally have no need for the services of a woman physician; and as only two of the private hospitals from which answers were received were large enough to have more than one assistant, it seemed best to disregard these hospitals in the further study of this question. The twelve Canadian hospitals, also, were set aside, as it was found that none of them had ever employed women physicians, and consequently could add little to a study of their work. This narrows the investigation down to the seventy-nine State hospitals having more than one assistant physician, and it is these hospitals that will be considered in the further treatment of the question as to the standing of women physicians in hospitals for the insane.

Taking up the study of the statistics from these hospitals, it is found that forty-five, or fifty-seven per cent, employ women physicians, while thirty-four, or forty-three per cent, do not employ women as assistants.

These hospitals are distributed geographically as follows:

| | Employing women physicians. | Not employing women physicians. |
|---|---|---|
| Northern States | 34 | 15 |
| Southern States | 1 | 8 |
| Western States | 10 | 11 |
| | 45 | 34 |

It will be seen from this table that the great majority of the hospitals employing women physicians are in the Northern States east of the Mississippi River, seventy-five per cent of such hospitals being in this section. According to the statistical table given above, and in accordance with the answers received, there is but one hospital for the insane in the South employing a woman physician. That hospital is in North Carolina. Personal knowledge, however, gives the information that all but one of the State hospitals in Virginia and several of the State hospitals in Kentucky employ women physicians, although no answers were received from these hospitals.

The earliest definite date given by any hospital for the insane at which a woman physician was employed to care for insane women is 1879. This was at the State Hospital at Kalamazoo, Mich. Several hospitals made statements which raise the question as to whether women physicians might not have been employed at an earlier date elsewhere, but their information was so indefinite as to be scarcely trustworthy. In 1880, Dr. Alice Bennett was placed in charge of the women's department of the State Hospital at Norristown, Pa., and in 1882 Dr. Mary Alice Avery was appointed woman physician in the insane department of the Philadelphia Hospital. While it is somewhat outside of the subject of this paper, it seems almost impossible to pass on without mentioning Dr. Avery's heroism at the time of the great fire that occurred in the insane department of the Philadelphia Hospital in 1885. At that time she went back and up to the fourth story of the burning building at the risk of her own life and saved the life of one of the patients. Since then the use of women physicians in hospitals for the insane has gradually extended and is still extending even more rapidly as the years go by. Within the past ten years sixteen hospitals have added women physicians to their medical corps, and at present there are eight hospitals employing

two or more women physicians. Of these eight hospitals, three have their women patients cared for entirely by women physicians, who are under the direction of a superintendent, and one has the women patients cared for entirely by women physicians under the direction of a woman as chief executive, where the management of the hospital is divided among three executive heads.

Of the forty-five hospitals employing women physicians, thirty-six employ them because they consider their services beneficial to the patients, while nine employ them because they are compelled to do so by law.

As to the results of the employment of women physicians, the expression of opinion among superintendents who are now employing them is as follows:

That they are satisfactory, thirty-one; fairly satisfactory, eleven; not satisfactory, three.

While the data derived from the hospitals where women physicians have never been employed is purely a matter of opinion and does not have the weight that experience gives, still the attitude of the medical superintendents of these hospitals upon this question is interesting and instructive. As regards the employment of women physicians in the thirty-four State hospitals at present not employing them, the expression of opinion is as follows:

Eight stated that they considered the employment of women physicians advantageous, but for various reasons had never employed them.

Eleven stated that they did not think the employment of women physicians advantageous. Seven of these gave no reason for their opinion. One, who stated that he had never employed a woman physician, said that he objected to them because of "disagreeing with themselves and causing friction in the hospital." The remaining three superintendents stated that women physicians had been employed formerly in their hospitals, but, having proved unsatisfactory, their services had been discontinued. Of these men, one said that he had had no personal experience with women physicians, one had tried one woman, and the third gave his experience in these words: "It has been our experience that most of the women physicians who have been employed here have not been able to maintain discipline and get on as well with the patients and employees as they might. Two of those, however, that were

formerly employed here were satisfactory in every respect. It may be that we were unfortunate in our selection of some of our women physicians." This statement is a very valuable one on this subject, as it shows that a thorough trial was given women physicians, and that in this hospital, at least, the majority of the women physicians weighed in the balance were found wanting.

The principal indictments against the work of women physicians, as they appeared in the answers to the queries sent out, are lack of executive ability, tact, ambition and ability to maintain and submit to discipline. Perhaps the fairest way to arrive at the general opinion on this subject would be to quote the words of several superintendents as to their experience in this matter.

Dr. W. W. Hawke, Philadelphia Hospital, Philadelphia, Pa., states:

The main objections to women physicians are that they have less ambition for medical work than men; they are not executive; their likes and dislikes are too pronounced. The weaker side of woman's nature is frequently predominant in the treatment of the insane. It is rarely that a woman is able to stand constant abuse from a patient without some form of retaliation, which is inconsistent with the treatment of the patient. Women also show their jealous nature when a comparison is made with the work of men, instead of the keen, honest rivalry which should be dominant.

Dr. Morris S. Guth, State Hospital, Warren, Pa., states:

The employment of women physicians has proved satisfactory when they were the right kind of women; otherwise, they have not. In my experience the patients do not consider them as real doctors and do not have the same confidence in them that they do in men. If you can get earnest, industrious, loyal women, there is no objection to their work, but I have learned by bitter experience that they are hard to find. The personal character of a woman physician is of equal importance in hospitals for the insane with her medical knowledge. Another objection is that most of them require more waiting on and special consideration than men do. Allowances have to be made for them continually and they interfere with the discipline of the hospital. I have been associated with them in different institutions for nineteen years, and have only known two who were as good as the average young man physician. Those two were much better.

Dr. Wm. A. White, Government Hospital, Washington, D. C., states:

The employment of women physicians removes the objections or complaints that arise under other conditions on a basis of sex differences, both with reference to patients and to nurses. The presence of a woman physi-

cian is a great help to the morale of the hospital, particularly with reference to the dealings with questions of the special illnesses of the female employees, questions that are very difficult at times of proper handling by the male members of the staff. I should not hesitate to replace a woman by a man if she were incompetent or *vice versa*—the question involved is primarily one of competency and not of sex.

While the fact that I am a woman might raise the question as to whether any opinion I would give upon this subject would not be prejudiced, still I feel that eight years' service as an executive physician, with from three to six women physicians continuously under my direction, has given me a broad enough experience with them to express an opinion upon their efficiency. In my work as chief physician of the women's department at the State Hospital, Norristown, Pa., having women physicians under me as assistants, I have found their services, in the main, satisfactory. Some have naturally shown better preparation and more ability than others, several have shown marked executive ability, several have been troublesome; but, taking a broad view of the matter, I believe that their work has been equal to the work of any average staff of young men physicians, and that the annoyances caused, while somewhat different in character, were no greater than those that would have been caused by a like number of men assistants.

In summarizing, the following points are of interest:

Seventy-five per cent of the hospitals employing women as physicians are in the Northern States, east of the Mississippi River.

A woman physician was first employed to care for insane women in 1879, at Kalamazoo, Mich. Since then the use of women physicians for that purpose has gradually extended and is still extending.

As to the results of the employment of women physicians in hospitals for the insane, the great majority of the superintendents so employing them state that their services are satisfactory.

The principal indictments against the work of women physicians are lack of executive ability, tact, ambition and ability to maintain and submit to discipline. My own experience with women physicians does not lead me to agree entirely with the above statements or give so harsh an opinion of their work.

The whole matter resolves itself into a question of individual ability, attainment and character and not into a question of sex.

## DISCUSSION.

Dr. H. M. Hurd.—I think it ought to be pointed out that prior to the appointment of women physicians in institutions for the insane it was the habit in a number of institutions to have non-resident women physicians on the staff, who were expected to see women patients in cases where it was necessary. I think that our honored friend, Dr. Chapin, had some such arrangement as that long before 1879. I also have the impression—I have been trying to verify it—that the first woman physician in connection with an institution for the insane was in Mount Pleasant, Iowa. I am going to look the matter up, and if Dr. Wolfe is wrong I shall take great pleasure in pointing out her error.

Dr. Sanborn.—I do not wish to discuss this very interesting paper. I wish to say, however, that at the Maine Insane Hospital we employed our first woman physician in 1872. She was on service a year, when it was thought she was not well fitted for the work and we dismissed her. We have had a woman physician on our staff almost continuously since 1872. One other did not seem well fitted for the work and was relieved. We have dismissed more men physicians than we have women. With me it is a question not of sex, as the Doctor has stated, but rather of ability and aptitude for the position.

Dr. Herbert B. Howard.—There is one point that, in my experience I think, should be considered by those that have not had good success with their women physicians. We do not have so many women physicians to select from when we are filling vacancies. There are not so many women physicians educated as men and many of the best medical schools are not open to women, although some very good ones are open to them. Some of the institutions in Massachusetts are required to have a woman assistant physician by law. We regret that the Harvard Medical School has never been open to women. At times these good schools have been at such a distance that Massachusetts superintendents have had to select their women assistants without seeing them. One of the ablest assistants I ever had was a woman.

There is another characteristic that I have found that Dr. Wolfe did not bring out in her paper. I believe that the best of them get more interested in their work than men. I once had a woman assistant who was so interested in her work that we actually had to fine her with a vacation. I do not remember having a male assistant so absorbed in his duties that we had to force him to take a vacation.

Dr. White.—I think it is worth while to call attention to the fact that although in the past the number of women physicians one could choose from for positions in hospitals was limited, it is rapidly becoming larger. There have been a good many colleges opened for the education of women within the past few years, and now there are a good number of women to

choose from. Because of the limited avenues for women physicians it is usually easy to get a woman and for the same reason it is easier to keep her, and, therefore, I think it is worth while to consider her availability in hospitals for the insane, and not discriminate against her because of her sex. I think we should let the matter rest on a question of competency rather than of sex.

Dr. Houston.—I am of the impression, in fact am quite sure, that the Worcester Hospital had a woman physician a number of years prior to 1879.

I should also like to register my approval of the employment of women physicians. For five years at our hospital the charge of the women has been entirely in the care of women physicians, and so far I cannot see but that the work is as well done as it is with the men.

Dr. Babcock.—After an experience and observation of women physicians in hospitals for twenty-seven years, I do not feel that I can well keep silent. In that time I have known six or eight women physicians, and I think they have been the equal of any male assistant physicians that I have had the honor and pleasure of knowing. I simply wish to add this tribute to the women physicians I have had the good fortune to know.

Dr. Pilgrim.—Through some misunderstanding Dr. Wolfe's letter did not reach me in time to answer her queries in regard to the services of women physicians. Had my answer reached her, her statistics would have been a little changed, for while I am required by law to have one woman physician, I have by choice three, and my experience going back for nearly twenty years with women physicians induces me to say that their services as a general thing have been very satisfactory and their work on the medical staff very valuable.

Dr. Wolfe.—You probably noticed in my paper that I said that the earliest definite date that I could get for the employment of women physicians was 1879. Now, unfortunately, it is not my fault that the people who knew of earlier dates did not answer my queries, but I am very glad to know of these earlier dates. However, I should have appreciated the knowledge much more several months ago.

As to the matter of the number of women available, I have seldom had any trouble in getting good women. Once I did have trouble, but that was at a time when I had an unusual number of vacancies upon my staff. As a rule, I do not have any trouble in getting good women assistants. I would say also that my experience has not been the experience of Dr. Howard. While my women have done good work, I must say I have not had any trouble about getting them to take vacations.

There is one point I would like to make. In my paper you notice I spoke of one of the indictments against the work of women being a lack of ambition. That seems to me hardly a fair indictment. When you stop

to think about the matter, what is there in most hospitals for the insane in the United States to make women ambitious? There are exactly three hospitals that I know of at the present time, with the chance of a fourth, if Dr. Pilgrim has all of his women under women, in which there is any chance for a woman to advance. You take the young men who are in this line of work and they know that they can go up to the higher positions. They know that in time they can become first assistants or superintendents, possibly, but what have women to look forward to? A woman must have a tremendous amount of native ambition before she can be ambitious for the reason that there are no material rewards for her, unless at the Government Hospital, perhaps at the Worcester Hospital and the Norristown (Pa.) Hospital. Now when such indictments are brought up against women, I think it is only fair to take these facts into consideration.

# A REPORT OF THREE CASES OF KORSSAKOW'S PSYCHOSIS.

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In the last twenty years, since Korssakow first published his very clear and comprehensive description of the symptom-complex of polyneuritic insanity, the number of reported cases of the psychosis which bears his name has grown into the hundreds. Some confusion concerning the disease arose, at first, even in the minds of careful observers, and many cases were published which were lacking either in the characteristic physical or mental symptoms of the disease.

Naturally, with the passage of time and the accumulation of reported cases, the observations of Korssakow have been enlarged upon and the clinical aspects of the psychosis have become greatly varied. Running through all the various descriptions of cases, however, there appear certain cardinal symptoms which have come to be recognized as essential to the disease, the mental picture of which has now become quite clear.

The disease is usually sudden in its onset, with insomnia, restlessness, delirium and hallucinations. Sometimes it begins with stupor and hallucinations and less frequently develops gradually from a condition of chronic alcoholism.

Korssakow, in describing the psychosis, made two large divisions. In the first he included all cases ushered in or accompanied by delirium. In the second, he placed all the forms characterized by confusion or stupor. Dupré, who, in Paris, examines all prisoners in the city suspected of insanity, described the disorder under five heads, while Knapp in his excellent monograph goes still further and makes no less than eleven different divisions. The latter recognizes a delirious form which is present in at least two-thirds of all persons suffering from this psychosis. Both Dupré and Knapp describe a stuporous or confusional form. For

all practical purposes, however, the divisions proposed by Korssakow are sufficient.

The disease is due to a toxæmia. The toxic agent in the great majority of cases, 75 per cent, according to Bonhoeffer of Heidelberg, is that seductive poison which has been the boon companion of man in all ages—alcohol. The psychosis occurs, according to the same authority quoted above, in 3 per cent of all chronic alcoholics. It is much more frequent in women than men. In eight cases observed by the writer, all, with one exception, were women. The quiet, steady drinkers are the greatest sufferers, in whom the existence of the alcoholic habit is frequently unsuspected until the disease appears. The chronic poisoning of the system by alcohol, then, either per se or by causing the production of some other toxic agent in the body, is the most prolific cause. Some authors consider it the sole cause, and look upon the disease as simply an aftermath of delirium tremens. The metallic poisons, carbonic acid, syphilis, tuberculosis, sepsis, severe anemia, carcinoma, trauma, fever, etc., are all enumerated as causes of the symptom-complex. It is possible that tuberculosis may at times be secondary to the disease in question.

Roemheld (of Honegg) in *Archives of Psychology,* Bd. 41, No. 2, reports a case of *brain syphilis,* with Korssakow's symptom-complex, cured by anti-syphilitic treatment.

Doctors O'Malley, Franz and Blackburn, of the Government Hospital at Washington, publish a case of polyneuritis of *autotoxic* origin with Korssakow's syndrome, and with report of autopsy and microscopical findings.[1]

Multiple neuritis furnishes the prominent physical symptoms, hence the name polyneuritic psychosis, and either precedes or is concomitant with the delirium which frequently ushers in the disease. It more seldom *follows* the delirious condition. All the nerves of the body are probably affected. Pain in the extremities with tremor and loss of power, particularly in the extensors of the hands and feet, causing the wrist and ankle drop, follow in short order. Occasionally there is also paralysis of the occulo-motor, facial and pneumogastric nerves, muscular atrophy, diminished electrical reaction, clonus, loss of deep reflexes, paræsthesia and

[1] American Journal of Insanity, October, 1908, Vol. LXV, No. 2.

hyperæsthesia, in the paralyzed parts; nausea, anorexia, vomiting; rapid, feeble, irregular and weak pulsations of the heart. Occasionally, also, there may be at the outset epileptiform or apoplectiform seizures; speech disturbances and Romberg sign.

Disturbances of the mind are evidenced by:

1. Hallucinosis—aural and visual illusions or hallucinations.
2. Amnesic disorientation.
3. Impaired memory for recent events, with confabulations, falsifications and pseudo-reminiscences.
4. Hyper-suggestibility.

The hallucinosis is of no definite duration. The most marked mental symptom of the psychosis is the peculiar memory defect—the markedly diminished impressibility of memory, as a result of which disorientation is usually complete. Time, place and events are hopelessly jumbled. Gaps in memory are filled in with fabrications and confabulations. Memories of the hallucinatory delirious state are retained after the hallucinations have subsided.

It is in the field of memory that the most marked changes are noticed in this disease. Events of one minute are forgotten in the next. Memory is affected under all three of the divisions given by Ribot, *i. e.,* retention is impaired as well as the power to recall and localize.

"There is a disturbance of function, a failure to assimilate impressions from without into consciousness and to represent those before it which have already been assimilated in the past—in other words, a failure of mental synthesis."[2]

Fabrications occur in which actual events are hopelessly mixed and described in absolutely "false sequence and connection"—leading to fantastic stories. There may be also "hallucinations of memory" in which patients confidently recall events which never happened. To this latter, Wehrung would limit the term "pseudo-reminiscences," while he uses "confabulations" for the fabrications a patient uses to bridge over awkward gaps in his memory. Some writers go so far as to say that pseudo-reminiscences are essential to the existence of the disorder, and the more pronounced these hallucinations, the deeper the disturbance of ideation. The emotional condition is subject to oscillations and

[2] F. W. Mott, Archives of Neurology, Vol. III.

greatly influenced by suggestion. The patient is generally cheerful and sometimes jocular, but underneath this is a condition of peevishness and irritability.

In the stage of delirium, the more profound clouding of consciousness, and the character of the hallucinations and illusions serve to distinguish it from the post-infection psychoses The prognosis in the latter is also much more favorable.

In paralytic dementia, the onset is gradual with greater speech disturbances, marked paragraphia and cerebral paralysis. The memory of the alcoholic is more affected for recent events, of the paretic, for more remote happenings. In presbyophrenia, there is absence of alcoholic history and neuritic disturbances, a childish emotional state and a sort of busy restlessness, especially at night. The age of the patient, also, with arterio-sclerosis may help to differentiate, but the difficulty may prove greater if the presbyophrenic has had an alcoholic history.

*Prognosis* is unfavorable. The disease rarely, if ever, terminates in complete recovery, and may prove fatal in its early or later stages. The course is apt to be prolonged, resulting, in the most favorable cases, in more or less impairment of memory and emotional deterioration.

*Pathology.* The hemorrhagic polyencephalitis, described by Wernicke, in cases dying in the early stages, is what one would expect to find in severe alcoholic intoxication (Kraepelin). The whole nervous tissue from cortex to periphery is involved in destructive changes. In the cortex degenerative changes are noted in the tangential fibers and in the spinal cord, atrophy of the fibers, particularly of the columns of Goll.

The treatment consists in the withdrawal of alcohol and suitable surroundings either at home or in an institution, of rest in bed and on an air bed if bedsores threaten. In the early stages the treatment is identical with that of delirium tremens. The neuritic symptoms are alleviated by hot applications and anodynes, gentle friction, at first, followed by massage and electricity later, to prevent atrophy of the muscles. Some authors advocate the use of fats and the administration of strychnine.

In the ten-year period between 1898 and 1908, there were four thousand, three hundred and seventy-seven admissions to the Connecticut Hospital for the Insane. Five hundred and forty-two

or about 12½ per cent of this number were of toxic origin, and five hundred and thirteen of the latter number, including eight cases of Korssakow's psychosis, were grouped among the different forms of alcoholic insanities. Each of the eight cases of Korssakow's psychosis, mentioned above, had well authenticated alcoholic histories. Three of these were admitted to the hospital between April 30 and September 23, 1908. A description of these cases, two of which are still under observation, follows:

Case I.—W. H. D. Born at Batavia, N. Y., in 1867, of English and Irish parentage. Married; developed normally, received a common school education, learned the carpenter's trade, and later worked as brakeman and trackman on railroad. Last worked for N. Y., N. H. & H. R. R., at Bridgeport. Habits have been very intemperate for years; he admits the steady and excessive use of alcoholic stimulants and claims that he worked until his employers noticed his mistakes due to forgetfulness, and laid him off. Committed to the Connecticut Hospital for the Insane, April 30, 1908. Duration of disease unknown.

*Physically.*—Paraplegia, with ankle drop, knee and ankle jerk abolished. Fingers are partially flexed, stiff, shiny and markedly painful on forced extension. Pain in feet, legs and forearms, and over nerve trunks on deep pressure at bend of knee and elbow. Loss of power shown by inability to stand or write. Galvanic irritability lessened. Pupils even but sluggish, tongue protruded in median line, tremulous; tremor of eyelid and facial muscles. Heart pulsations accelerated by slightest exertion, sounds rapid, irregular and weak, probably due to involvement of the vagus. Pulse 90, soft. Romberg sign present. Test words pronounced correctly. Urinalysis shows marked indicanuria.

*Mental Symptoms.*—Attention is easily held. He comprehends questions, is disoriented for time and persons, and varyingly so for place. He is confused and manifests marked disturbance of impressibility of memory. He recognizes his physician and nurses, as such, but, although he has been frequently told, he is totally unable to recall their names. Memory for events of psychosis is strikingly impaired. Asked, "How long have you been in this place?" replied, "four months" (really three weeks). Almost immediately he was again asked, "How long have you been here?" "Since early last fall," apparently having forgotten his last answer. He then begins to talk of himself, "I worked for the N. Y., N. H. & H. R. R., at Batavia—no Rochester," etc., not realizing that Batavia and Rochester are not on the N. Y., N. H. & H. R. R. "Came here with a hackman, only, from Batavia—no—Rochester—no—Bridgeport. I ran away from the hospital and I led them a chase," etc. This last is a pseudo-reminiscence, probably of his delirious state while in Bridgeport Hospital. He manifests no true insight into his condition, attributing his illness wholly to rheumatism. Emotionally, he is exceedingly unstable, usually cheerful, smiling and

responsive, but influenced by suggestion, quickly becomes irritable, sad and tearful.

July 24, 1908. No hallucinations of any type have been noted since admission. Orientation is still impaired for time, but correct for place and persons. He knows that he is in the Connecticut Hospital for the Insane, but is unable to tell the date of his entrance or how long he has been here. As a result of his memory defect he is still confused and contradictory, and mixes dates, events and places. He does not fabricate.

October 1, 1908. Now dressed and on the ward. Appears clearer, realizes his mistakes and tries to correct them. He states that, to the best of his knowledge, he worked on the Cos Cob division of the N. Y., N. H. & H. R. R. last winter. "I was in the habit of drinking, which often incapacitated me for work. At last I laid around saloons drinking and stopped working altogether. I must have been sick or insane for I was sent to the Bridgeport City Hospital (almshouse) by my lodge of Red Men and I think in a month or so I was sent here." He is not clear as to date of entrance to or length of stay in the Bridgeport Hospital. He realizes his mental weakness and his inability to work and bemoans his fate. He tries hard to fix dates and reconcile matters.

October 28, 1908. His gait is still awkward and unsteady, but improved. Mentally, practically the same as last noted. Memory defect still apparent. Discharged to-day to custody of friends as improved. In hospital six months.

Case II.—Mrs. I. H. A poorly-nourished woman, thirty-nine years of age, native of the north of Ireland; Protestant; has been twice married and is now divorced; has had three children, all of whom are dead except one by her first marriage. Her early occupation was that of dressmaker. Of late years she has rented a house, and let rooms for questionable purposes. No history of neuroses or psychoses traced in family. Syphilis and trauma denied. Negative menstrual history.

*Habits.*—For at least a year, and probably for a much longer period, she has been addicted to the excessive use of beer, gin, whiskey, tea and coffee.

Admitted to the Bridgeport City Hospital July 30, 1908, complaining of pains all over the body, deep-seated and boring in character. Onset was sudden. She had no chill, sweats or elevation of temperature, but vomited considerable bile, was constipated, had severe pain in epigastrium, anorexia, and eructations of gas. She also suffered from palpitation, dyspnœa and precordial pains. Heart sounds were weak and floppy, aortic accentuated, deep reflexes were absent, pupils sluggish. There were no areas of anæsthesia or paræsthesia. Muscles of hands, forearms and legs were weak and somewhat atrophied with beginning contractions. Dropping of wrists and feet was well marked, trunk muscles also involved; some edema of feet; pain or pressure over nerve trunks. She was unable to use her hands or to walk and general debility was so marked that she was placed in bed.

*Mental Condition.*—Illusions of sight and hearing were numerous, but very changeable. Her language was obscene and profane, with marked and changing fabrications and confabulations. She was disoriented for time, place and persons.

Brought to the Connecticut Hospital for the Insane two months later, September 23, 1908, and taken to ward on a stretcher; condition untidy. She had no use of her feet and legs; was unable to straighten her legs from knee down. The right leg above the ankle was somewhat discolored. She was unable to hold anything in her hands. Wrist and ankle drop was pronounced. Clonus of foot obtained by simply lifting the leg. Some edema of hands and feet. Pronounced tremor of fingers, facial muscles and eyelids. Legs were smooth, shiny, flexed and contracted, knee reflexes absent, pupils notched and reacted sluggishly. Pain elicited on pressure over nerve trunks.

October 2, 1908. Habits untidy and filthy. She is restless, uneasy and talkative, especially at night. Fabrications and pseudo-reminiscences are still prominent.

October 13, 1908. Lumbar puncture made to-day with the following results:

PRESSURE.

| | |
|---|---|
| At the beginning of puncture | 70 mm. |
| At the end of puncture | 40 mm. |
| Variations | 30 mm. |

FLUID EVACUATED.

| | |
|---|---|
| Amount | 17 cc. |
| Appearance | slightly bloody; centrifugated until clear |
| Sp. gravity | 1.006 |
| Reaction | slightly alkaline |
| Reducing body (sugar) | trace |
| Protein | 0.005 |
| Potassium mg. in 10 cc | 2.500 |

November 2, 1908. Some disturbances of perception; she has illusions of sight and hearing; hears the voice of her daughter who has been dead for over a year, and sees her in the doorway clad in a checked dress. She has no conception of place and no stable idea of time. Mistakes persons about her for friends and relatives long since deceased. She has no insight, but expresses no delusions. Memory for striking events of her past life, such as her marriage, births and names of her children, death of her daughter, is retained, but the dates of their occurrence are unknown. There is also marked amnesia for all of the events of the psychosis. Pseudo-reminiscences, which may be enlarged upon by suggestion, in which she narrates improbable stories in a jocular way, are frequent. She laughs heartily over her fancied experiences.

November 12, 1908. No marked change. Shows the same impairment of memory. Orientation is imperfect and she has no conception as to the length of time she has been in the hospital. She recalls the death of her daughter, but cannot approximate the date of her decease. She is less chatty, and falsifications are less pronounced. She volunteered the remark that her daughter had appeared to her in the doorway and conversed with her.

December 15, 1908. She is now oriented for place and nearly so for time, but mistakes identities of those about her. Says she has been here three or four weeks (really three months). "I came here the last of November" (September 23, 1908). "Dr. T———, who roomed up in the village, came to me on Main St., Bridgeport, and asked me if I would not like to go away. He came with me, took my clothes from me and left me here to be treated for rheumatism." There is still marked amnesia for events of psychosis.

*Content and Train of Thought.*—She is loquacious. "I wish I had the 'tism' out of my bones. Have had it now for two years—no—going on two years—well it is more than one year. My memory is at fault because I am so nervous and easily rattled. After my daughter died a year ago, I kept a little store and worked in a laundry." Denies her drinking habits. "Oh, I have tasted it when it was going round, I took some—drank with others." Falsifications and confabulations of memory are very pronounced. She thinks she has been here a month (really six weeks). She makes a statement and immediately makes another entirely at variance with it, apparently having entirely forgotten her first statement. This peculiar memory defect was the most marked feature of the psychosis. She not only has pseudo-reminiscences, but also reminiscences of these falsifications, and also for more remote events. She answers some questions accurately, showing fewer lapses and fabrications than at first, and appears to be trying to correct some previous impressions. Thinks now that the voices she heard talking to her about her daughter may have been imaginary voices. Emotionally, cheerful, jolly, humorous—is "happy that she is living." Still has wrist drop, but can extend index finger of right hand fully and the others partially; pain in hands, forearms and legs and some hyperæsthesia—marked clonus of foot—knee-jerks abolished; tremor and ataxia.

June 1, 1909. Same condition prevails. There is considerable atrophy of extensor muscles of left hand.

Case III.—M. L. Born in Bridgeport, Conn., of Irish parents, thirty-three years of age. Married; shop employee in cartridge works. Developed normally; received a common school education, but never cared for study. Father was very intemperate. No history of insanity or neurotic tendencies in the family. Patient was married in 1898 and a son was born January 13, 1899, which lived only a short time. Four years ago her husband left her and since that time she has consorted with other men and led a dissolute life. For seven years she has been intemperate, and her

mother writes she has had syphilis. Has never had delirium tremens. The present is the first attack of mental trouble, and was of sudden onset, about four months ago. Speech became thick; gait, unsteady. She became talkative and restless, and at other times dull and apathetic; suffered from insomnia. Habits were filthy. Memory was poor for all events. She rambled in her talk, was mildly delirious, saw people who were not present, handled an imaginary child, feeding it candy, and complained of getting the candy in her hair. Passed urine and feces in bed. She was entirely unconscious of her surroundings. Although her whole body was more or less paralyzed from alcoholic polyneuritis, and she had passed her urine and feces in bed, she declared that there was nothing the matter with her. She sang and talked at night and thought she could get up and walk. Imagined the attendant was her husband.

Admitted to the Connecticut Hospital for the Insane, June 24, 1908. Aural and visual hallucinations cannot be elicited. She mistakes attendants for former acquaintances. Is completely disoriented. Says the season is fall (June, 1908). In reply to questions as to place, she says she is in a boat, then remarked, "No, this is my home at Stratford, Conn." She comprehends questions, but recent past events cannot be recalled; says it is morning (really 4 p. m.). She shows retrospective falsifications of memory. She cannot tell her age, when she went to school, nor the date of her marriage. Fabricates—says she slept in the corner bed—but arose this morning and got into the one she now occupies. Says she sees her husband every night. "Last Thursday or Friday—I just forget now what day it was—we took a trolley ride up to New Haven and had a fine time; then went to Savin Rock and stayed there a few hours and had dinner, and then came home." Asked about the dinner, she replied, "Oh, we had a fine dinner—about ten courses—and everything you could imagine to eat. But we did not go right home, but went to Seaside Park and sat out on the benches for about two hours." Says her father has died since she came here, she received notice of it yesterday and went to make arrangements with her mother this morning in regard to the burial. "I have seen you before with your wife, in New York, week before last when I was down there with Maggie. You treated me for rheumatism." In the emotional field she is subject to marked oscillations. As a rule she is happy and cheerful, but easily irritated and angered.

*Physical Symptoms.*—Quadruple paraplegia, from motor and sensory polyneuritis; wrist drop; ankle drop; pain and hyperæsthesia in affected areas, and over nerve trunks on pressure; some atrophy of extensors; pupils dilated and very sluggish to light and accommodation; fine tremor of tongue; chronic nephritis; impaired speech, gait, station, and general muscular weakness.

August 10, 1908. Still completely disoriented. Says she is in a boat, "Came here this morning in a boat from New York—this is a boat and we will be in Bridgeport in a little while. I went to New York last night and left my pocket-book there. I went to a show with another girl." Content of

thought is made up of fabrications and pseudo-reminiscences. She laughs and converses with Case II, whose bed adjoins hers, and seems very jolly and happy.

August 21, 1908. Polyneuritic symptoms not so marked, especially on right side, in both arm and leg, and wrist drop not so prominent. Speech not perceptibly changed. Cannot pronounce clearly the usual test words. Amnesia and pseudo-reminiscences continue. She now expresses fantastic and somatic delusions similar to those of outset. She felt of the counterpane and when asked what was the trouble, said, "Why, this is a dog skin and must have come from that dog I felt on me."

| Lumbar Punctures Made: | Sept. 9, 1908. | Oct. 13, 1908. |
|---|---|---|
| | PRESSURE. | |
| At the beginning of puncture | 150 mm | 130 mm. |
| At the end of puncture | No more fluid could be obtained | 60 mm. |
| Variations | | 70 mm. |
| | FLUID EVACUATED. | |
| Amount | 4½ cc | 32 cc. |
| Appearance | perfectly clear | perfectly clear. |
| Sp. gravity | | 1.006 |
| Reaction | slightly alk | slightly alk. |
| Reducing body (sugar) | | trace |
| Protein | 1% | 0.013 |
| Potassium mg. in 10 cc | | 2.100 |
| | | 46 CELLS IN 100 FIELDS. |
| Cells | | 32 lymph. — 69.57%<br>1 fibro. 2.17%<br>13 Endo. 28.26% |

June 1, 1909.—Patient is now dressed and sitting up, and is much improved physically. She is still unable to pronounce test words, shows considerable impairment of memory, and is at times irritable and peevish.

# HYSTERICAL INSANITY, WITH REPORT OF CASES

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Hysteria is a mental disease, one of the so-called functional disorders. It has no ascertained pathology. People rarely die from hysteria alone, and, if they do, nothing in a pathological sense can be found to account for the conditions present in life. Yet it presents many serious symptoms, definite physical signs, and symptom complexes which very much simulate definite organic conditions—conditions which show more or less constant pathological changes in certain organs as, for instance, hemorrhage and softening in hemiplegia, sclerosis in tabes, spastic paraplegia, etc. Post-mortem examination confirms, in a positive way, organic disease, and only in a negative and unsatisfactory way, hysterical or functional conditions.

These severe symptoms, anæsthesia, paralysis, contractures, blindness, and the various somatic disturbances are, however, present and real, even if no histologic change can be found to account for them. They are not simulated. They differ from organic lesions in that they can be cured. They are often very suddenly cured, but not by drugs, diet, proper hygiene, etc., but by some mental influence, some sudden emotional shock, by suggestion, hypnotism, an anæsthetic, or by some means that makes a profound impression upon the mind of the patient.

Hysteria is very frequently seen by the general practitioner, but often is not given the consideration it deserves. The neurologist sees much of it, and gives much time and attention to it, and considers it a very important subject. The alienist, on the other hand, to whom the disease really belongs, has paid but little attention to it. He has had frequent opportunities to see it and to study it. He has control of his patient and can keep him or her under constant and close observation, yet some textbooks on mental diseases do not mention the subject, others refer to it occasionally as occurring with or as a complication of some of the well-known psychoses, and a few give it the importance of

a separate heading and devote a few pages or a chapter to its consideration.

The subject of hysterical insanity and hysteria as occurring in other psychoses has not been given the attention it deserves in publications of this kind. Neither is there a clear and definite idea of its symptom complex as a distinct form of insanity.

Very few will deny entirely that hysterical insanity does not exist, but in many hospital reports it is not mentioned as a separate disease. Hysterical manifestations are sometimes mentioned in reports of cases of other psychoses, as in dementia præcox, manic-depressive insanity, and in regard to epilepsy. That there is a certain close connection between dementia præcox and hysteria has been shown. In one of the cases reported in this paper the case at first was thought to be dementia præcox. Hysteria occurs in certain types of individuals. Dementia præcox occurs in certain types; this also may be said in regard to other psychoses. Different persons, under the same circumstances, react in different ways. What may cause a psychosis in one type of an individual has no such an effect upon others. A study of the type of individual is, therefore, very useful and is really a necessary part of the history of the case, and must be given great consideration in making a diagnosis.

Psychological studies, therefore, should be given great attention by alienists, and comparisons made between normal persons, the eccentric, the semi-insane, defectives, and the insane. Hysteria has been studied in this way extensively, so that persons of a certain type and with certain characteristics are spoken of as hysterical, and these characteristics as the common stigmata.

Psychogenic factors are now being taken into consideration as etiological factors in the causation of mental diseases, and by means of psycho-analysis and comparative studies facts are being discovered which are of the utmost value, and which will give some valuable indications in regard to prophylaxis and treatment.

Hysterical insanity is admitted by most authorities, but the conception of it seems to differ much with individuals. No English books that I have seen give a very clear idea of the different forms of the disorder. Some speak of hysterical mania, hysterical melancholia, hysterical stupor, hysterical paranoia, etc. Others deny the existence of such conditions and classify these

conditions as mania, melancholia, paranoia, etc., with hysterical complications. Woodman, after studying a large number of case histories, reports twenty-four cases, which he classifies into seven divisions. Raecke makes three forms:

1. A form, with excitement and stupor, in which there may be delirium and somnambulism.

2. A form, with depression, which includes attacks of distress, frightened delirium, stupor, mental clouding, with occasional paranoid episodes and ideas of persecution on a permanent basis of melancholia or hypochondria.

3. A paranoic type of compound hysterical insanity which is built up mainly out of accumulated delirium, imagined episodes, somnambulistic "twilight" conditions, and eventually the development of a dual personality.

Janet regards hysteria as a mental disease and defines it as a form of mental depression characterized by the retraction of the field of personal consciousness and a tendency to the disassociation and emancipation of the systems of ideas and functions that constitute personality. Its etiology is found in the stigmata, that is, hysteria occurs in certain types of individuals who, when examined, present certain peculiarities which are designated as the stigmata. Upon this basis following some emotional shock (which acts as the direct cause), as a trauma, an intoxication, an illness, a death, a love affair, a fire, or other things that may cause pain, regret, worry, grief, anxiety, overwork, disappointment, and other emotional conditions, we have suddenly or gradually some manifestation of a hysterical condition, such as a paralysis, a contracture, a convulsion, or some sensory, visceral or special sense disturbance, or some distinct mental upset; the person becomes insane. He may be excited, delirious, maniacal, or depressed; inactive, dull, stuporous, unconscious; or confused with clouding of consciousness, or he may develop ideas of persecution (paranoic delusions). There may be a complete change in his personality, he becomes like another person; then, after a shorter or longer period of time (suddenly or gradually), there is recovery, and with this, no or imperfect remembrance of the past condition—a more or less complete amnesic period.

The stigmata are really the main or the most constant symptoms. To some or all of these stigmata are added many other symptoms,

often apparently widely different, but in reality all due to the same cause, "a depression or exhaustion of the higher mental functions, with retraction of the field of personal consciousness and disassociation of ideas and functions." Such a hemiplegia would not show a brain, cord, nerve, or muscle change; an anæsthesia, no nerve disease; blindness, deafness, aphasia, etc., no organic lesions. Also various hysterical visceral conditions, as aphonia, vomiting, hiccough, polyuria, uterine and ovarian conditions, etc., which closely resemble organic diseases would show no pathological changes. This comparison does not apply as positively with regard to hysterical psychic disorders that resemble mental diseases, because so little is known as regards pathological changes in the brain in regard to most mental diseases.

When all these widely separated symptoms are considered they can be seen to be related, and can be explained by the definition "mental depression with retraction of the field of personal consciousness and disassociation and emancipation of the system of ideas and functions that constitute personality."

The principal stigmata are divided by Janet into two classes: 1st. Proper stigmata which belong exclusively to hysteria. 2d, The common stigmata which may also occur in other neuropathic conditions. Under proper stigmata, which he considers the essential stigmata, are suggestions and conditions with similar properties and closely allied to suggestion, as absent-mindedness, subconsciousness, equivalence, and transfers.

The common stigmata consist of a peculiar mental make up (a neuropathic constitution), persons with deficient will power, loss of self-control, heightened self-consciousness, a tendency to exaggeration, with morbid craving for sympathy; persons who are selfish, self-absorbed, often unhappy, discontented, fault-finding, complaining; who are entirely wrapped up in themselves; who are unable to long concentrate their attention upon things outside of themselves; who have periods of reverie, and consequently show imperfect memory for things not directly connected with themselves.

The proper stigmata will be considered with the psychic symptoms. The symptoms of the disease are very numerous and comprise a large number of widely different conditions. They are classified as visceral disturbances, sensory and motor disorders,

and psychic disorders. All are really psychic disorders. We desire to consider only the psychic disorders and one of the motor disturbances, convulsions.

Among the essential stigmata, all of which Janet summarizes "as a retraction of the field of consciousness," are

*Suggestibility,* where, unconsciously, the patient takes up ideas and develops these ideas to the fullest extent, associating the different parts subconsciously and acting upon them.

*Absent-mindedness.* Their attention is limited. They are able to think of and do only one thing at a time, therefore, many things occurring about them are not noticed or remembered, although they have apparently seen, heard, or otherwise noticed them.

*Transfers* are changes from one part to a corresponding part of a similar condition.

*Equivalence* is the replacement of one condition by a different one.

Hypnosis is closely related to suggestion, and only those who show the essential features of suggestibility can be hypnotized. Hypnosis, then, can only be induced in a certain number of persons, and those persons have been or are liable, at some time, to show hysterical symptoms, if some exciting cause presents itself (trauma, emotional shock, etc.). Hypnotism, therefore, only occurs in hysteria, and hypnotism is only an artificially induced somnambulism.

Somnambulism is one of the most characteristic symptoms of hysteria and occurs only in hysteria, according to Janet. Somnambulisms are states occurring in hysterical persons and lasting a variable length of time, in which there is a sudden or gradual change from the conscious state to that of sleep, or a dream-like state, in which the patient may assume many peculiar attitudes and perform numerous simple or complicated acts in which all the senses may be brought into play, or may lie dormant. He acts out in reality ideas and scenes which exist at the time in his mind. He moves, talks, looks, listens, and does things in a certain regular order. During this time they are oblivious to everything outside of their dreams, and all they know or feel are things connected only with their dream. They are, in reality, another personality. After a time the other or normal personality sud-

denly or gradually comes to the front again; they become conscious and resume their life where it was broken off at the beginning of the somnambulism. For the period of the somnambulism there is a complete loss of memory for all things that have happened—a complete amnesia.

A somnambulism is then a complete disassociation of consciousness, with an exaggerated and independent development of an emancipated idea or ideas, and associated with an amnesia. Somnambulisms are simple or complex, monoideic or polyideic—monoideic when one idea is disassociated, polyideic when a system of ideas is disassociated.

Fuges are somnambulistic states in which a predominant idea is present, but the mind also grasps other things, so that these persons may start out with a definite purpose in their mind; they are able to travel, to take long journeys, which may last for days, during which time they meet people, ride on trains, work, secure food, etc. During this time the person has other characteristics from his former self. He is really another person for the time being in everything, except that he has the same body.

Double or multiple personalities are more protracted and complicated somnambulisms, in which the same person, at different times, leads two or more dissimilar lives, independent of each other. In complete double existence, where two periods alternate during a lifetime and do not know each other at all, they are called, by Janet, reciprocal somnambulisms. These cases are very rare. In incomplete existence, when one personality gradually overshadows and dominates the other personality, he calls it a dominating somnambulism. Then there are cases which combine the reciprocal and dominating somnambulism and have more than two personalities; these are multiple personalities.

The constant and characteristic features of all somnambulisms are amnesias. These may cover the time of the somnambulism or may extend back and take away all previous memories. They may last for a few minutes or for days, months, or years; they may be complete or incomplete.

The object of this paper is to report several cases showing amnesia. Some have been diagnosed as hysterical insanity, others as other conditions, and while we all may not agree upon certain

cases, it is believed that hysteria has played a definite and prominent part in all these cases.

These cases are taken from the regular male admissions to the New Jersey State Hospital from November, 1907, to June, 1909.

Of 105 cases (of all kinds) personally received and examined (representing most of the time every other male admission, part of the time every third male admission), ten are abstracted and reported here; two are cases of Drs. Sandy and Watson.

Case No. I.—I. C., a West Indian, age 27, hat-rack man in hotel.

*Family History.*—Parents living, father neurotic, mother neurotic, an invalid since coming to the United States twenty-five years ago. Both maternal grandparents died of tuberculosis. Paternal grandparents were French Jews and healthy. A maternal uncle of patient in an insane hospital for many years. He is said "to have fits, followed by violent headaches; following which he would take knives and forks and wander to the sea." An uncle of patient's mother was insane, but not in a hospital. Two brothers and three sisters living; eight children dead, "all died before one year of age, one of croup, one of convulsions, twins at birth, one of teething, a twin sister of patient at birth, one premature at six months." An older brother is nervous and irritable, and has a child who has been in a children's hospital for "nervousness." Others are well.

*Personal History.*—Pregnancy and birth normal; child was delicate until two years of age. It was stated that he had convulsions until two years of age. His mother later denied that he ever had convulsions. Breast-raised, dentition normal. After the age of two he became healthy and not different in any way from other children. He was light hearted, friendly, cheerful, fond of music, had no bad habits, began school at six years of age, made good progress. When eleven years of age had some scalp disease; "his head was a mass of sores and his hair came out," and was out of school some time on account of this; returned and continued in school until fourteen or fifteen. Got along well in school and with others. After leaving school worked in a brick yard for three years; considered a good, reliable, efficient worker. Then in a grocery store for two or three years as a general utility man, then as an hotel waiter, and later as a bartender from October, 1903, to August, 1904. Was married in August, 1904; marriage considered very satisfactory, lived happily with wife, had one child, born October, 1905, now living and well. Following marriage worked in a hotel one month, then in a grocery store from October, 1904, to February, 1905. From February, 1905, until January 8, 1907, worked as a hat-rack man in a hotel; had a good position, was considered an efficient worker, kept house, and was living happily until June, 1907. Patient admits occasionally drinking when in company. Never a constant drinker; says that he is easily affected by alcohol.

*Etiology and Onset.*—In June, 1907, his wife became sick. He worked hard all summer, and with his hard work, worry and care of his wife he became tired out, run down and in poor health. In August he made the remark that he thought his mind was going to give way. In September took a trip for his wife's health. He returned worse than he was before. He was dull, depressed, and melancholy instead of being happy and cheerful as he used to be. His wife was benefited by the trip, but a few days after their return she again became sick. He returned to his work, although not feeling well. He became more depressed when his wife again became sick. He continued worried and depressed until about the middle of November, when he attempted suicide by gas. He closed up his room, attached a rubber hose to the gas and put the other end in his mouth. He was discovered nearly dead, but was revived. Before this a revolver and a razor were taken from him. He was acting in a suspicious manner, but made no attempt at suicide with these instruments. About this time he made the remark that "he thought the world was against him." His wife said that before this attempt at suicide he would get out of bed at night, go to the radiator, listen and look down it; he would call and awake her and say: "Look at them, Hatty, don't you see them; don't you see them? They are coming after me." He was taken to his father's house in Philadelphia. He recovered from the effects of gas, and improved otherwise to some extent, but was still depressed and despondent. He told his father that he would make a man of himself and not attempt suicide again. Returned to his own home alone on Thanksgiving night. Work was dull and he was idle two weeks, then returned to work; here he acted very strangely. He told the people at the hotel and at his home that money had been stolen from the hotel, that people talked about him and accused him, and that detectives followed him. He was constantly apprehensive and afraid of arrest. He told that they gave him $50 to buy stamps with, to see if he was honest. He was suspicious of people about the hotel, and thought that they were trying to catch him in some dishonest act. He told of a man dying after he had taken him a glass of milk, and thought that he would be accused of causing his death. He continued at work until January 8, 1908, but was apprehensive and suspicious. He had false sight and hearing when home at night. He made the remark that if he saw the patrol coming after him he would drop dead—and talked of it being better to be dead than to be crazy. On January 8, 1908, returned from work about 2.30 p. m. He came in the house and asked the person there for a piece of paper to use for shaving purposes. He then left and went to shave—the next known of was hearing a scuffle. Later, people broke in and found the wife dead with her throat cut, and the patient with his throat cut leaning against the wall. One-half of his face was lathered and the other half shaved. The baby was lying on the floor covered with blood from the mother; apparently no attempt to injure the baby had been made. He was taken to a hospital.

Dr. W. Blair Stewart kindly furnishes the following: On admission

I found the whole throat laid open and the larynx exposed. He was highly excited and very weak, but surgical measures revived him and ultimately resulted in the parts healing. He had to be kept in a straight-jacket all of the time, as he endeavored to tear his throat open again, and on one occasion threatened violence to his female nurse. His case at that time was one of acute melancholia, with a tendency to dementia. He left the hospital February 7, 1908. His sister states "that while in the hospital he did not realize or talk about what had taken place. He thought that his wife was living and asked to see her and the child. He mistook a nurse for his wife. He tried to strangle a nurse several times and assaulted the physician with a chair. He talked while in the hospital." From the hospital he was taken to jail—the sheriff gives the following account of him while there (February 7, 1908, to March 31, 1908): "He made several attempts to pull the wound apart, tried to drown himself in the bathtub; he would pile up all of the chairs in the place; at times he was irritable and violent, threw chairs at attendants; since being in jail has not spoken a word. He is continually on the move, wandering around in an aimless manner—only once in awhile sitting down. He frequently moves his hands about, works his lips and murmurs, sometimes as though trying to talk, but no word comes from him. Sleep is not good. Has not appeared to be afraid or apprehensive. Indifferent to his surroundings and to others. Does not laugh or cry; not untidy." His sister states "that since being in jail he has apparently not known any of his relatives. He has not spoken to them or even noticed them." Was brought here March 31, 1908. Came without any trouble.

*Upon Admission.*—Wandered aimlessly around the room, did not look at physicians or other people, did not notice anything going on about him, finally sat down and began to move his hands about. Seemed to comprehend; was asked questions, but gave no answers. Was led to ward. On the ward was quiet, obedient; gradually learned to follow ward routine. Would not talk for several days—makes a peculiar noise in his throat and with his mouth. Pushes food, both solid and liquid, down his throat with his fingers. He laughs, smiles, and makes faces. Wanders around the ward in an aimless manner, sometimes touching and feeling different objects or persons as he comes to them. Keeps his head down, does not look about. Shows many mannerisms.

*Physical Examination.*—April 10, 1909. In this he does not co-operate, but makes no resistance; he is very playful, imitates physician, is good natured, seems to understand, and does most things that he is told. Will not talk.

Abstract of Physical Examination: Fairly well built; height, 5 feet 5 inches; weight, 135 pounds. Face, oval; head and face symmetric. Palate, high and narrow (no body defects). Fairly well nourished, skin and mucous membranes healthy, numerous scars—two scars of neck, two scars of left elbow, one on right elbow (suicidal attempts). Temperature, normal.

Smell and Taste: Gives no answers. Plays with bottles. Makes faces in a playful way in regard to taste.

Ears: Pays no attention to watch tick; hears ordinary talking.

Eyes: Expression bright, playfulness, pleasure; nothing abnormal about use or control of eyes and lids; pupils react to light and other tests (no perimeter test at this time).

Cutaneous Sensibility: (No answers.) Apparently feels when touched.

Pain Sense: Anæsthesia—pin pricks all over body paid no attention to. No pain reaction to pin pricks, cold, or heat. Does not draw away or show pain from a burning match.

Sense of Position: Stands and sits when told. No tenderness of nerve trunks. Analgesia of ulnar nerves, anæsthesia of eyeballs.

Vasmotor and trophic disturbances, salivation. Dermatographia, localized perspiration.

Reflexes: Deep, all present and normal.

Superficial: Plantar, gluteal, abdominal, epigastric, react. Conjunctival and scapular absent.

Motor Functions: Good motion of all facial muscles, face expressive, and he makes many grimaces. Muscles of neck that were cut interfering with swallowing, and to a less extent with respiration. Unable to protrude tongue beyond teeth. Has to push food down his throat. All other muscles normal.

Gait: Peculiar. He goes around with his head bent down and his shoulders bent forward, shuffling. Inco-ordination not shown by tests. Balancing power good.

Grip: Weak; he makes but little effort. No fibrillary twitching. Slight tremor of fingers.

Reading, Writing, Speech Test: No co-operation. Organic reflexes normal, no convulsions, sleeps well. When asked if he dreams he laughs, but gives no information. Respiratory, circulatory, and digestive organs negative. Appetite good. Urinary and genital organs negative, except faint trace of albumin in urine.

*Mental Examination.*—Demeanor: Always quiet, orderly, and obedient, follows ward routine. Shows many mannerisms, makes grimaces, smiles, laughs, and appears to be happy. Not seclusive, wanders around the ward, going from place to place, doing many odd, foolish and amusing things. Decorates his person with paper, rags, broom splints, etc. Shows hallucinatory attitude at times (sight and hearing). Shows echopraxia, imitates movements of physician and others in a playful manner. For a few days after admission he would not talk, but made a peculiar noise in his throat. Later began to talk, and could talk quite distinctly; would not answer questions in a relevant manner or give any account of himself. Made foolish remarks at times. Face very expressive, expression changeable, sometimes that of fear, sometimes that of happiness, pleasure, playfulness, clownishness. Is not untidy, cares for himself.

*Stream of Thought.*—Sometimes will talk spontaneously or will answer

some questions. At other times will not talk. To-day he appears to be afraid, shows hallucinatory attitude, has a look of fear and horror on his face. What are you afraid of? "Those things on horses, they are after me." How long have they been after you? "Fifty million years." Do you see them? (He points to dark corner of room.) "Look, you can see them." Do they talk to you? "Yes." He fixes his gaze in that direction, and an expression of great fear comes over his face, he makes motions with his hands as though to push them away and says: "Let them alone; go back, go on." Suddenly his facial expression changes, he laughs and smiles, he looks out of the door and says: "See my horse out there; take your hand off that horse, Boswell" (attendant). It is regretted that more and better samples of his talk were not written down, but this was neglected at the time. In answer to questions absolutely nothing can be elicited from him in regard to any events of his past life. When questioned says that he has no wife, no child, no sister, no relatives, "all I have is Boswell and you."

*Delusions, Hallucinations, Illusions.*—No delusions or illusions can be elicited. Hallucinations of sight and hearing are present, with hallucinatory attitudes. Somatic sense deceptions are present—frequently puts his hand to his throat and makes efforts as though he wanted to pull his throat apart. He sometimes acts as though he had peculiar feelings of some kind in his head. He taps it, beats it, and makes motions indicating that he feels some peculiar sensation in his skull. He will not, or is unable to, explain the sensations.

Delusional Developments (non-paranoid): He may possibly have some delusions in regard to contamination. He frequently brushes his clothes and picks small particles of dirt from his person, but at the same time he does not avoid dirt. He will lie on the floor or crawl under the beds and benches.

Hysterical Complex: There is probably an amnesic period, at least he pretends not to remember anything about his crime, wife, or child. He does not recognize or notice his sister when she visits him; acts toward her as he does to other people. Says he has no baby, wife, or family.

Mental Organization: Orientation and grasp of surroundings. He will give his name. (At first he would not or could not give his name. His name has been told him by attendants.) He knows the name of one of the attendants and the ward doctor. He will not tell where he is, the date, time, the nature of the institution, or other things connected with his stay here.

Memory: Retention, school knowledge, past life, etc., nothing can be elicited. Will not read, write, or repeat speech tests. His speech is peculiar, low, mumbling, and indistinct, as a rule, and hard to understand, but sometimes more clear and distinct, and can be understood. Other notes between April 10 and June 1, 1908, show no change in his condition; mannerisms, playfulness, grimaces, foolish actions, hallucinations, and hallucinatory attitudes continuing; as a rule, happy and contented, but

apathetic in regard to his environment; sometimes talking, at other times refusing to talk; not knowing or refusing to recognize relatives when they visit him, and continuing so until June 5, 1908. Up to this time he was regarded as a case of dementia præcox. Prior to June 5 had been visited by his sister, brother, father, and mother; he acted toward them as he did to strangers. On this date was visited by mother, sister, and for the first time by his baby. The sister gives the following: "He came in the room with the attendant as usual, not noticing anyone. When he was spoken to and the baby mentioned, it produced no effect. He was told by the attendant to look at them; he did so but paid no attention to them. The baby was then held up in front of him and he was asked to remember her. Suddenly there seemed to be some change come over his eyes; he looked intently at the baby; his eyes lit up as though he recognized some one he knew. He took her, embraced and remembered her, and he just shook all over and was very nervous. He then recognized his mother and sister, and then asked where his wife was. (He was told by the attendant that she was sick.) Then he looked about and said: 'Mother, this is not my room.' Noticing the attendant, he asked who he was and what he was doing there. (The attendant said he was a friend of the family.) He then wanted to know where he was. He became excited. The attendant told him he was in a hospital, and had been very sick, and tried to calm him. He acted toward the attendant as he would toward a perfect stranger. Twice during the interview he had to be taken from the room because of his excitement and emotion." When seen by the physician (who did not know of the visit and its results), while making rounds on the ward two hours later, he appeared to be like another person. He came up to the physician, looking and acting entirely different, and asked if he was in charge. Patient stated whom he had seen, and what he had been told by his relatives and the attendant (who told him as little as possible, and nothing about his crime, etc.). Said he could not understand why he was in here, and could not account for being here. He claimed to have no knowledge of anything from January 8 until to-day, when he recognized his baby, mother, and sister.

From the time he saw his baby he has talked and acted in an entirely different manner. He is polite, attentive, takes interest in others and his surroundings; is sociable, agreeable, mingles with others, shows no mannerisms, talks spontaneously, gives relevant answers to questions, talks freely and frankly about his past life up to January 8 and after June 5. He also wrote an account of part of his life, and has written a letter to his wife, whom he thinks is at home sick.

Stream of Thought: "About the end of August I began to feel unwell. I felt haggard, tired, and dreary. My back and shoulders hurt, and I had pains all over me. I worked from 7.30 a. m. until 11.00 p. m. My work is not so hard, but I have much to remember and was on my feet all of the time. When I went home at night I was always very tired and went right to bed. In October I went on a vacation and returned to work

on the 16th. I did not feel better after my vacation, and was tired and had a haggard feeling, and worrying because my wife had not improved on the trip. The trip was really taken for my wife's health. I returned to work and worked up until some time in November. They say that I tried to kill myself with gas, but I do not remember. All I do remember is going to get the gas tube. I do not remember whether I got the tube from the cellar or in the pantry. When I came to myself, they say I talked of money and prayed for something to eat, and whistled. When I woke up in the morning I did not see my wife and baby. I was later taken to my mother's home in Philadelphia. I did not feel natural during this time. I remember returning to Atlantic City alone on Thanksgiving Day. I was around the house until December 26, when I began to work. Others told me that I talked and acted funny." (Denies all recollection of saying and doing queer things, or seeing or hearing voices, or being suspicious or taking poison of any kind, or thoughts of suicide, or the reason for getting the gas tube.) "I remember working from then until January 8, and of leaving the hotel for lunch on that date. I remember leaving the hat rack, going out in the usual way. I am not sure whether I rung on the time clock or not. I am not sure whether some one walked home with me or not; but that is the last I remember until June 5, 1908, when I saw a gentleman by the name of Boswell, an attendant here; also my baby, mother, and sister." In a postscript, he says: "While in Philadelphia, after the time they said I tried to kill myself, one day my mother went to the store at the corner of the street, and I was sitting in the kitchen of my mother's house and was reading the morning paper, and I found myself in the bath room, and I could not tell how I came to get in the same. I did not tell my mother because I knew it would worry her. I was told by my wife that I bounded out of bed, and that I talked of funny things and ran to the window. This I have no recollection of, and as far as I can remember, I felt all right. What I mean to say, I felt all right after I came back from my vacation; in fact, from the summer of 1907. I began to feel my strength leave me, and I can say to-day I feel like myself once more. I know for a fact that I feel better this day than I did last year in August." No delusions, hallucinations, or insane ideas of any kind can now be elicited. Complains only of his throat, says that he has a metallic taste in his mouth; thinks he has a tube in his throat.

*Amnesic Period.*—January 8 to June 5, 1908. Mental organization is very good, well oriented, good grasp of his surroundings, as far as he has been told. Data of personal identification and history of past life very fully and correctly given. Memory and retention good. Reads and writes correctly. Has good insight and good judgment.

June 23, 1908. Was told to-day that he cut his own throat. This produced no effect upon him as he had seen and felt the scars, and its cause had been intimated to him. Up until now he believed his wife sick and at home. He has written and asked about her, and been impatient because

he has not seen or heard from her. Was told to-day that she was dead. This was a great emotional shock to him. He cried bitterly, showed much real sorrow, and was much depressed and upset by the news. Continued depressed for a week, but gradually became more active again, talking, taking interest in things, etc.

July 18, 1908. Has complained of pain in his head and vertigo for the past two days. No anæsthetic areas present.

July 23, 1908. Was told to-day that he killed his wife—showed real sorrow and self-condemnation. Became again inactive, thoughtful, depressed.

August 1, 1908. Not as bright and cheerful as formerly. He complains of not feeling well at times. He will talk about his crime, but claims he has no knowledge of it, and that he is innocent of any intentions of wrong doing, and that if he did it he was insane and did not know what he was doing. Protests against being called a murderer by other patients.

September 1, 1908. Makes physician see him and talk to him each time he passes through the ward. Complains at times of headaches and vertigo, which is relieved by bromid or migraine tablets.

December 1, 1908. Still solicitous about his health; complains that he is nervous, cannot sleep, of indefinite aches and pains, of muscular twitching, and of certain sensations in his throat. Still half believes that he has a tube in his throat; says certain muscles twitch, offers to show them, but as yet has not been able to do so. He wants each symptom he has explained, and a reason given for it. If he is given medicine and assured it will relieve him, he is satisfied for a time; but if at all neglected he again complains. He is always looking for attention and constantly desiring new privileges. Enjoys the dances, chapel services, entertainments, and diversions of any kind.

January 1, 1909. Transferred to another hall, because of his numerous complaints of being annoyed.

February 1, 1909. After being transferred was thankful for the change, contented for awhile, and more happy.

March 1, 1909. Good physical health. Mentally, there is considerable emotional variation. He at times becomes depressed, discontented, and fault finding. He claims attendants do not treat him right, that patients call him names, etc. Does not think he is treated as he should be. At these times he worries, cries, is very unhappy, sends for physician; later says if he had not had medical assistance it would have been all over with him (meaning suicide). He is suspicious and open to suggestion. He says that he heard attendants say, in speaking of him, that the doctors have him under the influence of dope all the time. Several times he has mentioned this to the physician, and has been assured that it was not so, but he seems unable to get the idea out of his head, as he constantly refers to it. He complains of somatic disturbances, his eyes being blurred, of nervousness, twitching, insomnia, etc., and asks for medicine. Puts himself in the way of the physician and makes him stop and talk each time he passes through the hall.

March 9, 1909. Transferred to another hall because of not being able to get along there, makes constant complaints.

April 16, 1909. Complains of various somatic sensations, some paresthesia in limbs; no areas of anæsthesia, contracted visual fields are present.

Left eye red under 35, blue under 55, white under 55. Right eye red and blue, extending as far as 60 in the widest place; white within 45.

Mentally, he remains clear, well orientated, not demented, without delusions, hallucinations, etc., and with good insight and judgment.

Case No. II.—This case has not been as yet officially diagnosed. I offer it, however, as showing the Ganser symptom complex. The question of simulation has been seriously considered by the committing physicians, and also here. Personally, I consider it a case of hysterical insanity.

J. H., born in New Jersey, age 45, married, sanitary presser. Admitted December 14, 1908.

*Anamnesis.*—F. H., father, eccentric. A cousin (S. G. B.) insane and a patient here. Old records are very incomplete, but state "First admission March 7, 1895, age 45, common school education, milliner, single, temperate. First attack: Has been deranged six months or longer, not marked until the past three months. Etiology: Worry over an adopted niece, who had an illegitimate child. No heredity, parents temperate, but are second cousins. Appetite fair. Sleeps only under a hypnotic, menses only once in three months. Delusions: Fancies that familiar objects are not really what they are, all things are white, hears strange noises. The depression is not profound but sufficient to make her very unhappy. She is not social and prefers to be alone. General health deranged, indigestion, insomnia. Does not worry about her detention. Discharged, improved, June 1, 1895."

Patient is said to have been intelligent, and to have received a good education. Disposition, melancholy and reserved. A great smoker of cigarettes, a hard drinker at times, and always very nervous. Four years ago he disappeared for six weeks.

*Physician's Certificate.*—The onset of the present attack was gradual. Patient's physical health impaired. Has Potter's asthma; cleanly. On August 25 he shot and killed his neighbor, Edward Ford. He had frequently threatened suicide before that time, and had made an assault on his wife because he believed she was unfaithful. Supposed cause of insanity: The predisposing factors were an eccentric father and a mother who died of tuberculosis. The exciting cause was a stroke four years ago and the excessive use of alcohol. A maternal cousin (S. G. B.) was insane and was an inmate of the New Jersey State Hospital at Trenton. Has used alcohol to excess for the past four years until his arrest last August. Has also been an inveterate cigarette smoker. The patient said he was an inventor of a patent seat attachment which was worth millions of dollars, and that "they" were trying to get his secret away from him. "They" had sneaks watching him, "they" had put poison in his meat, and there was a stench in the water so that he could not drink it. He

heard them whispering about him, and saw them making signs. He knew they were watching him because he had dropped pieces of paper, which they would pick up and examine very closely, expecting to find a plan of his invention. They had also taken pieces of paper out of his pocket and were working day and night to get possession of his secret; he would give me no names, but said that they were very prominent and influential people. The expression of his face was that of a man who was under great tension; his eyes were usually fixed on one spot, and he seemed to be waiting and watching for something to happen. He had the appearance and manner of an insane person. A prominent symptom was his indifference to his coming trial for murder. Has vivid auditory hallucinations and delusions of persecution, loss of memory of earlier life, and the chronological order of events, could not recall the names of his children, the place where he lived, nor his wife's maiden name. His wife says: "He has changed greatly in his disposition and mental condition; that he would get cranky spells, would be very irritable, and that there was hardly any living with him. He was very suspicious of her and watched her closely. He talked of suicide. During July, 1904, he went away and was gone six weeks, all but two days; when he returned he was thin and sick, and looked worse than a tramp; he looked as though he had been through a spell of sickness and could not work for two or three months; complained of severe pains in his head, could not sleep nor eat, sat up night after night, and was near crazy. He had no recollection of where he had been or what had happened to him." On the morning of August 25, 1908, patient shot and fatally wounded E. F., a resident of B. On several occasions prior to this he had maltreated his wife under the unfair assumption that she had been too intimately connected with said neighbor. The exciting cause of insanity was a sun stroke occurring four years ago, and the too free use of alcohol. When interviewed by the physicians it was difficult to obtain any definite answers to the questions put to him. His memory appeared so defective that it was impossible for him to correctly recall any of the events in which of late years he was an active participant. He states "that yesterday or the day before a man brought a woman here and said she was my wife, when I never was married." "Marked defects were noted in orientation. While the patient did not seem much depressed he had a strained expression to his countenance." Upon admission, was quiet, pleasant; paid no attention to things going on, talked in answer to questions, and some spontaneously. At one time became suspicious of physician; answered questions, but unsatisfactorily; gave no information about his early and recent life, said or pretended that he did not know, assumed hallucinatory attitude. Had to ask Mr. Gaskill everything. (Mr. Gaskill was his jailor.) What is your name? "Joseph H——." How old? "I don't know." About how old? "Ninety or ninety-five." Where were you born? "I don't know, sir, Mr. Gaskill, he knows." Ask Mr. Gaskill? He looks away, assumes a listening attitude, quickly turns and says, "Bordentown." He again looks away, listens. What are you listening to? "Oh, just to whisperings of the

conspirators. Mr. Gaskill, he keeps them away from me though." Who? "Everyone—they tried to poison me on the boat. Mr. Gaskill has stopped them. He says it is a deep-laid plot that he cannot fathom," there are many in it, etc.; they are trying to secure his patent, etc. How long has the plot been going on? "Ever since I can remember."

*Physical Examination.*—December 17, 1908. A well-built, well-nourished, healthy man. When asked, says he feels good; is open to suggestion. When asked if he has headache or other pains, he complains of a dull headache and a dead feeling and of pain in his arms and legs. Gives no, or evasive, answers to tests of smell, hearing, taste, and sight. Expression at times peculiar; he frowns and looks away intently, as though trying to recall an answer. Some paresthesia. He tells when and where touched very slowly, makes mistakes. Pain sense diminished, shows no evidences of pain upon the legs, resists when abdomen is pricked, other areas are diminished, some tenderness of nerve trunks in arms, none in legs, otherwise negative. Mentally, quiet, orderly; follows ward routine, keeps away from other patients, at times is afraid, will cry and ask to be sent back to Mr. Gaskill, but ordinarily seems contented. He will talk in answer to questions, also spontaneously, but gives no information, refers things to Mr. Gaskill. He is not oriented for time, person, or place. He says that the last (or the first) thing he remembers is that he was along the sea shore and that he was pushed over board by the conspirators; that after a long time Mr. Gaskill came along and picked him up and took him to the ship. Mr. Gaskill has protected him since then, and kept others from stealing his patent. He was sent here by Mr. Gaskill from the ship because there seemed to be something a little wrong with him—and to get the pain out of his head. Says there is a plot, that he is watched, annoyed, and they are constantly trying to steal his patent. He claims not to know or denies everything, in regard to his past early life, work, marriage, children, home, Ford, murder, jail, etc., and dates everything from being picked up at sea. He will fix no date for this, nothing more definite than that it was a long time ago.

December 25, 1908. Acted and talked as though he had never heard of Christmas. He gives the same answer to questions each time, although questions are changed, and attempts made to break into his past life. He is inactive, sits or lies about the ward, does not associate or talk to others, unless he is spoken to; acts as though he was afraid, keeps by himself, and is suspicious. When questioned he has a perplexed look upon his face as though he was trying hard to recall something; at other times has a distant, dreamy, far-away look. Does not take much interest in his surroundings, frequently asks for medicine for his bowels; he thinks the conspirators sometimes steal it off the tray. Dr. Cort, one of the examining physicians, visited him recently; patient acted and claimed that he had never seen him before. There is a small spot of granulation tissue on the top of his head—he constantly picks at this. This is caused, he says, by a plank hitting his head while he was in the sea.

January 6, 1909. He says, spontaneously, to-day to the physician that he has been trying hard to remember the questions I have asked him, and continuing, says: "It seems as though it wants to get in. Do you think there is a break there (he points to his head)? It won't stay long enough to hold it, and the whispering." What is your age? "Age, age, I don't know." What is your name? "J. H." Where born? "I don't know—on the boat, wasn't it—I don't know. I don't belong here, do I? They are too rough. I am not out of my mind, my mind is out of me; I don't seem able to recall anything. I was sitting on the bench this morning and some one struck me right in the middle of the back." Who? "I did not see anybody, they (conspirators) were whispering around me; I listen a great deal to try to get a word here and there—to get something—if I could only make it stay—yesterday I eat my dinner and then vomited it up. (Idea of poison put in food by conspirators.) Doctor, can I have a little tobacco? Duke's smoking tobacco, that is the kind—I believe my mind is in that—sometimes there is so much noise that I can't work on my patent—I want to get back on the boat as soon as I can. Don't you think they will come for me soon?"

January 11, 1909. An officer from his home, whom patient knew well, visited him to-day, and talked to him of past events. Patient did not know him; talked and acted toward him the same as toward others.

January 20, 1909. Suspicious, somatic complaints, constantly annoyed by conspirators. Life is a constant struggle against them.

January 25-29, 1909. Chill, fever, follicular tonsilitis, etc. Produced no mental change. Contracted visual fields are present. In left eye all colors within the circle of 35, red largest, the blue about the same as white. Right, red and white within 40, blue within 30.

Case No. III.—N. G., colored, age 17, single, student.

*Family History.*—Parents normal. One paternal cousin alcoholic, another cousin had "spasms," with recovery. Maternal grandmother had "spasms and sinking spells." Scrofula in three other members of mother's family.

*Personal History.*—Nothing abnormal until onset of present trouble. Disposition reserved. Happy when all went well; if not, he would grieve, brood, and cry. Made good school progress. Entered Howard University in October, 1907. Took two years' work in one year. He went to Atlantic City during the summer of 1908 to earn money to return to school.

*Etiology.*—Financial troubles, worry about work, home sickness, and, finally, some physical sickness.

*Onset.*—During the latter part of July, 1908, he became worried and depressed, finally sick ("septic sore throat"). His thoughts became retrospective. He became emotional—would have crying and laughing spells. In August he joined the Methodist Church. This made a great impression upon him. "In September he began to have attacks when he would stretch out his arms, his eyes would glare, he would get stiff, he would sink to the floor, would seem unconscious, and then go into a spell which would last an hour or more. During some of these spells he

was highly excited—would just rave, cry out, kick, bite, jump up and down, assume posing attitudes, imagine that people were trees, that he was playing ball, talk and call to people he knew, preach, sing, pray, and call to his mother. At these times his attention could not be obtained; he would not answer if spoken to, did not seem to know those about him, or where he was; would take off his clothes and throw them at the wall and be indecent. Had false sight and hearing, would imagine people were present and call them imps and devils. Would carry on in this way until he became exhausted, and then be quiet and sleep for a time. Had to be strapped down. After coming out of one he would ask for his mother, would talk better and say that everything seemed dark to him. Had several such spells at home and also while in jail, where he was taken so that he could be controlled until he could be sent here."

*Admitted.*—September 9, 1908. Upon admission he seemed confused and dazed, was suspicious, would not talk, did not know where he was. Was quiet, but would not stay in bed for the next two days. Gave irrelevant answers to questions. Was not oriented. Suddenly he cleared up, talked about himself, could not understand his situation, said: "It all seems strange to me."

*Physical Examination.*—September 14, 1908 (after he had cleared up). Showed defects of smell, anæsthesia of eyeballs, a mitral murmur, and sprained ankle.

*Mental Status.*—September 17, 1908. He was then perfectly normal. Gave a good account of himself, except for certain periods. He denies doing and saying many things. "If I did so, I do not remember it." But remembers things up to a certain time. Says he was constantly worrying and thinking of home and school, and that he would go to sleep and then dream about being at home, in the wood, etc. Says his limbs would feel as though they were asleep, and that afterward he would have a very stupid feeling, a swimming feeling in the head, and sometimes a feeling in his throat, due to indigestion. He was normal from September 12 until taken to his home in Illinois, September 25, 1908.

*Comments.*—A young colored boy, away from home, overeducated, and overworked during the school year. During vacation out of work, financially embarrassed, and much worried. Finally sick. Became religious and joined the church, then had several grand hysterical attacks with amnesic periods. Sent to insane hospital, where he was in a dazed condition, with clouding of consciousness for a few days, then rapidly recovered and remained normal until discharged about two weeks later.

Case No. IV.—J. I., age 40 years. Occupation, potter. Born in England.

*Family History.*—Father a drunkard, a paternal uncle drank. Mother used alcohol moderately, and was abused by her husband; she left him when patient was quite young. She died of gastric cancer about one and a half years ago. On the maternal side an aunt had nervous prostration, an uncle kidney trouble, the grandfather used alcohol and died of Bright's

disease. An aunt of patient's mother died of cancer. A brother of patient has been an alcoholic since he was twenty-two years of age; goes on periodic sprees, and is gone for many months—wanders all over the country. Has now been missing for several months. His whereabout is unknown. Has been a patient in several hospitals for delirium tremens and alcoholism.

*Personal History.*—Early life normal, made good school progress. Began work when ten years old. Became a sanitary potter, always industrious and an efficient worker until the past few years, since when drink has interfered with his working time, but not his work. Disposition: Reserved, goes around by himself, "melancholy," his only hobby and recreation being gardening and walking. Marriage: Satisfactory, four children, lived happy with and cared for his wife and children. Habits: Began to drink when twenty-three years of age, drinking occasionally with friends. Since then he has gone on sprees from time to time for a day, or a few days; but has not lost time from work, or had amnesic periods until about fourteen months ago.

*Onset.*—Fourteen months ago his mother died a slow death from carcinoma. He watched by her and nursed her in an oil-stove-heated room. Says he worried much about her, and also some insurance he held in England. A few days before she died he started to drink a little. He remembers buying a half pint of whiskey, "leaving the saloon and walking a short distance down the street, and then nothing until I come to on the road to Langhorn." There was in this instance an amnesic period of a day and a night.

He has taken five or six similar trips since then, the last and longest one being two months ago, when he was gone over a week and found himself in Jersey City.

*Some Parts of His Stream of Thought.*—How long have you drank? "Seventeen years, but not heavily until this last year, when my mother died, then I seemed to go all to pieces, and have drank heavily ever since. I get despondent and get to drinking. I drink so much that I don't know what I am doing. I go right off then; I just feel that I got to go. I lose my head and start off." Do you know where you are going? "I don't know, I have no idea; it seems as though I were asleep like and then wake up; maybe I will be standing or walking at the time. It comes just like you were waking up, then I look around and think what place is this; I wonder where I am; then my mind goes back and I remember I have started off on that drunk." Tell me about your last walk. "I had been drinking about two weeks; my last remembrance was standing on the bridge at Mulberry Street talking to my brother. I had a bottle of whiskey; I gave him a drink and watched him go away. I took another drink and remember walking from the bridge and taking two or three steps (Sunday night), and then nothing more until Thursday (ten days later), when I was sitting down with my back against a barrel on some old wharf. I got up and looked around, saw a policeman

and asked him what place it was; he said Jersey City. I asked him what time it was and he said about 6.30 (a. m.), so I started to walk home. When I woke up I found my hands all sore, as though I had been working, and I had $5.20 in my pocket and a pair of overalls, a pair of laborer's shoes, two shirts and two undershirts, all done up in a shoe box. When I started out I had no money." He states that he has never gone over the same route twice, and knows nothing about what he does or says during his absence. "The last few times it seems as if I knew and did not want to get away. I would keep inside the house and walk around the room. The last two times I made up my mind that I would stay at home." His wife states that between intervals of drinking he is perfectly normal. As soon as he begins to drink he acts queer, looks wild like, is restless, does not talk to people at home, except to say a few words; does not stay in saloons, wanders from one to another; does not associate with people, but knows where he is and those about him. Does not eat or sleep, walks all the time, drinks night and day, finally disappears and is gone for days; then comes back and is unable to recall events of the days he was gone. During his last spell, before admission, he remained at home. Following a spell he is depressed, cries much and desires to be put out of the way, so that she has to hide his razor and knives, as she is afraid he will do himself harm.

The last drinking spell ended by a fit. Wife did not see him in this fit. His account of this is: "I had drank for a week, then I had had nothing to drink for two days; on the second day I had the fit. My wife had gone out to see the doctor. I just sat in the chair talking to a neighbor; I was just talking to her, that is all I know about it. When I came to it was just like as I had been asleep. I saw a lot of people there and wondered how they got there." Says he knew those he saw and where he was. He came to the hospital as a voluntary patient to see if he could be cured.

*Physician's Certificate States:* "Patient said he felt that he must go away, get away from something. Feels he should take his life sometimes, felt that it was not safe for his family to be with him. Walked to and fro across the room. Very nervous."

*Physical examination* negative, except increased deep reflexes, slight tremor, a mitral murmur, vasomotor disturbances, and alcoholic gastritis. (Last drink three days ago.) Visual fields but slightly contracted.

*Comments.*—Epilepsy, hysteria, alcoholic amnesia are three conditions to be considered. Accepting Janet's views on hysteria I believe this to be a case of hysterical insanity, and consider his convulsion as a hysterical convulsion. There is a positive history of periodic alcoholic excesses; but prior to his mother's sickness and death there was never any loss of consciousness, fuge or amnesia. Following this emotional condition I think hysteria has been added to the alcoholism, and has assumed the most important position, and that the fuges and amnesia are hysterical conditions.

## Epilepsy and Hysteria—Hystero-Epilepsy.

Do the two conditions occur together? I believe they do in some cases. I think epilepsy is sometimes diagnosed when it is not present, and the condition is one of hysteria.

Following are four cases reported. Three of them are admitted with the history of epilepsy. They are supposed to have had epilepsy for some years, with quite frequent convulsions, yet in the hospital only one of the four ever had a convulsion.

This man has attacks but shows no psychic symptoms. In all the disease has begun in adult life. We see many cases of epilepsy here, but the character and disposition of these cases seem different than in the ordinary case of idiopathic epilepsy.

The cause of the disease in Case V is given as a head injury many years before. Attacks are brought on by emotional disturbances. The man is easily affected by alcohol.

In Case VI injury and sun stroke were present years previous to the onset of the disease. Overwork and close application in a hot, noisy room were given as the cause.

In Case VII epilepsy is not proven. There is the history of an episode with indecent exposure and suicidal attempt following lack of work, worry, and a family quarrel.

In Case VIII the onset and etiology date from purely emotional causes.

All are foreigners. The immediate cause of admission to an insane hospital in all cases were episodes, periods of excitement or violence, conditions that had not occurred before. Some of these patients have had convulsions at quite frequent intervals, but without psychic symptoms. In all there was clouding of consciousness and amnesia. Were not these somnambulisms or fuges hysterical manifestations in cases of epilepsy? In only one case am I convinced that the diagnosis of epilepsy is fully established. Emotional causes were prominent factors in causing the episodes. All were arrested for a criminal offense during the episode. Here a medico-legal consideration presents itself.

Case No. V.—C. W., a German, age 44 years, married. Occupation, stone mason. Admitted July 12, 1908.

*Family History.*—Maternal cousin insane, father tubercular.

*Personal History.*—Negative until twenty-three years of age, then, while in the German army, he fell twenty feet, striking the back of his

head; was unconscious and delirious three days. There was no paralysis, no convulsions, no headache. Made a good recovery in four weeks and was well until eleven years ago (age 33), when he had some kind of a spell while at work; these spells continued about every three or four months until three years ago. Spells are described by himself and wife as follows: "Spells come on when I get mad; I feel bad in my stomach, and she can hear something run up and down from my mouth to my stomach, and out of my mouth comes some sour water, and then my head feels so heavy and like a drunk feel; and then I sleep and don't know nothing until the next morning, when my wife tells me what I do. That I talk about what I do (work, etc.), and about being here twenty years and not getting my papers." Wife states that he laughs, cries, talks, while in a spell, and that the minister has great influence over him in stopping them. For the past three years he has had what she describes as big spells. "His eyes go around; he sometimes bites his tongue, froths at the mouth, falls down and is unconscious, sometimes for an hour. After one he is confused, and does his work all over again; sometimes he laughs, sometimes cries after a spell. These big spells occur now every four or five weeks. He has no little spells at this time. Is easily affected by alcohol."

The reason of his admission here was an episode of excitement—a fuge—after spending Sunday in the country with some friends and drinking some beer he returned home. His children quarreled that evening over a lead pencil; he became mad and went to bed. Had seven or eight "big spells" that night, and severe headache the next morning, stayed home and slept Monday. On Tuesday was better and worked all day; came home that night. Had a quarrel that day with a bartender—was all upset; talked to his three-year-old child as he would to a man. Was irritable, later left the house and returned at midnight with his brother. Went to bed, but soon after became excited, talked loudly, rapidly, and incoherently; finally quieted down at 6.00 a. m. and slept until 3.00 p. m. the next day. Was normal from then until Friday night; worked Thursday and Friday, quarreled with another workman and returned from work earlier than usual Friday night. Appeared to be out of his mind, excited; some household remedies and the minister quieted him down, and he finally went to bed and slept for awhile. Woke up, called his wife, talked rapidly, became excited and noisy; said he must phone to the Kaiser to ask pardon for not informing his regiment that he would not return. He talked about a letter he should have written to this effect, but which he had neglected to do; was anxious about this and afraid of punishment, so wanted to telephone to the Kaiser for pardon. He demanded money and threatened his wife. He seemed afraid to go out, appeared to think some one would catch him. Finally, his face became very white; he pushed his wife aside and ran out and down the street. Later, it was learned, that he went from place to place trying to get in to use a telephone; finally got into a saloon and

tried to call up the Kaiser; could not get him, so pulled the telephone from the wall and ran out. Early in the morning tried to get into a hospital to telephone; ran away from there and wandered into a cemetery and lay down under some bushes, where he was discovered by an officer, who woke him. He fought and resisted the officer, but was finally overpowered and taken to the jail about 8 a. m. Saturday morning. Was examined.

*Physician's Certificate Says:* "He was excited and his talk was rambling and disconnected. He seemed in a dream-like state. He also seemed to have delusions in regard to being an important officer in the German army." Was brought here on Sunday, was quiet, talked about himself in a rambling way, half English, half German. He knew the day, where he was, and the police officer. When examined he showed no psychosis, but there was a partial amnesic period for his peculiar actions, and he had a very imperfect knowledge of his admission and the next two days. The diagnosis of epileptic insanity with hysterical attacks, or hystero-epilepsy, was made. He did well, had no attacks of any kind while here; was discharged August 28, 1908.

Case No. VI.—W. S. C., age 46 years, English, widower. Occupation, file cutter. Admitted June 5, 1908.

*Family History.*—Negative.

*Personal History.*—Childhood environment not good. Began work very early, enlisted in the army when seventeen years of age. Saw service in South Africa, was shot in the head, suffered hardships of war in Africa and India. In India had a sun stroke. Epilepsy began eight years ago. At first petit-mal, later grand-mal attacks occurred. Petit-mal attacks are more frequent. Admitted here because of a hysterical episode, a fuge. "His wife died in February, 1907, and that worried him much; since then he has been afraid someone would wrong his daughter. Two nights before admission he had several spells; early in the morning he got up and said to his daughter: "A., you know we are married." He grabbed her and tried to assault her. She knocked him down and escaped. He went to work that morning, worked about five minutes, left his work without a word to anyone and walked seven miles to another town, stopping at various farm houses on the way and telling the farmers that King Edward had placed upon him a great responsibility, and that he was now ruler and owned these farms. He ordered the farmers out as he went from place to place. He was finally arrested and brought to the jail. There he was excited and talked in a rambling manner upon religion and the saving of Great Britain, and, if it was the will of God, America.

Upon admission, June 5, 1908, he was well orientated but slightly excited, talked freely about his spells. He remembered some things he did during this episode; says, "God's voice told me, in the name of King Edward, to order the people out and take possession." In the hospital showed no psychosis; there was a partial amnesia. He has since had numerous petit-mal attacks, but no excitement or psychic equivalents.

Case No. VII.—C. E. H., Englishman, age 43 years, married. Occupation, iron molder. Admitted March 14, 1908. A man out of work, worried, unhappy, quarreled with his wife, attempted to assault his daughter, exposed himself indecently, was arrested and put in jail; there attempted suicide, was sent here. He denies the indecent exposure and attempt at assault. Has no remembrance of it. He describes his attacks as: "I don't know what come over me, only I get awful nervous; the least thing puts me out of the way. I get wild, it seems as though my whole insides were working. I get talking to myself or at random. It goes dark, like a shadow, or a scale comes over my eyes; then I have headache and thoughts come to me to put myself out of the way because no one wants me."

While in jail, after he had made several attempts at suicide, he says the following scene occurred while he was awake: "I fancied that I had been away a long time and had returned; all the streets were lined with people; I was preaching to them and hundreds were converted. I saw a light from heaven shine on my head like a ring you see in pictures." He relates other visions that have occurred at other times.

Both he and his wife deny that he ever had convulsions. Wife states that sometimes he is uneasy and restless, moans and kicks while asleep. He sometimes dreams of being paralyzed, unable to move, and complains of a feeling in his hands as though they were dead, which lasts for three weeks sometimes. Sleep not good. Anæsthesia of eyeballs.

Patient upon admission was orientated, but unhappy and slightly depressed for a few days. He talked freely and acted in a rational manner. Demeanor was normal a few days later, and continued so until his discharge, December 14, 1908. The only thing shown here was some unhappiness, slight depression for a few days, and regret that he attempted suicide. There was no retardation, no self-accusation, and not enough depression to make a diagnosis of manic-depressive insanity. A positive history of convulsions could not be established. The man used alcohol; but alcohol could not be connected with this attack. A diagnosis of a psychic epileptic equivalent was made.

Case No. VIII.—A. G., Hebrew, age 60 years, married. Occupation, shoemaker. Admitted November 29, 1907. First fit occurred seven years ago. He was arrested and sentenced to pay $5 or spend two days in jail. He became frightened and had a fit in court. Another occurred four months later, and others at more frequent intervals until 1907. For a few months before admission he was very nervous, worried about money that was due. On November 25 said it was his last day, and had a fit. Fell asleep, woke up later crying and laughing; became excited, noisy, destructive; had to be tied down; was sent here.

He was much excited for a few days, disorientated, confused, suspicious, but gradually cleared up. Was then perplexed and unable to understand how he got into this place. An amnesic period was present. Had no convulsions while here; was discharged January 8, 1908.

Was well for a year, then the spells returned, following a severe cold. Daughter states: "They occurred at night, he is unconscious, breathing is labored, bites tongue, foams at the mouth, but there is no twitching anywhere. He lies absolutely quiet, his eyes closed, and is unconscious all night and for hours the next day. When he comes to he is very weak, and has no remembrance of being sick." She states that since his first admission to this hospital, he always loses his mind two days after the spell, and continues in this condition for three or four days, during which time he becomes very much excited, laughs, talks, sings, etc., but afterward can recall everything that happens during this excitement.

On March 4 had a light spell at night. Felt uneasy, was suspicious, and thought people walked about outside of the house. Got up and looked out, was apprehensive, walked up and down, talked and became excited, quieted down and went to bed at 6.00 a. m.; slept until 9.00 a. m.; came downstairs and seemed to be all right. Had another spell on the fifth, assaulted his son, became excited and had to be tied down. Remained quiet the rest of that day and all that night until March 6. Had no fit on March 6; went to church, there got mad over something and started to hit several people; started for home, was hit with a snowball; "this made me excited and I had a big fight"; when the officer arrived he lay down, kicked, bit, and spat at, and gave them much trouble to take him to the station. He was examined.

*Physician's Certificate States:* "Patient said he was Jesus Christ, loaned money, was rich, was hand cuffed in cell, was excited in talk and manner. Talked incessantly and incoherently. Thinks he is another person, imagines he is a bank president, and thought I was President of the United States. Spat at everyone around him, was on his knees all the time, talking and shaking his fist."

Was brought here with considerable trouble, March 6, 1909. Upon admission, was excited, talked rapidly, was orientated; he quieted down, told about his trouble, was bathed and put to bed without trouble. Slept part of the night, but early in the morning he became excited, noisy, violent, hard to control, fought desperately anyone who came near him. Was finally put in a continuous bath. All day he was noisy, shouted loudly, talked incoherently, sang, showed great psychic and motor excitement, rhyming, flights of ideas. Happy when let alone, but very ugly and resistive when approached. Refused all food. The next day the excitement was less marked. Violently resisted tube feeding on the 9th. Continued much excited, refused all food and attention; was kept in continuous bath much of the time until March 12, when he took food, became quiet, would talk, accepted attention, etc. Assumed his normal demeanor and continued so until his discharge, April 26, 1909. Never had a fit of any kind while in the hospital. Later he remembered some of the incidents of this period and imperfectly about his trip and admission here. The man never used alcohol.

## Hysteria and Dementia Præcox.

Three cases are reported. All were doubtful cases. If they are dementia præcox they are atypical cases. All presented prominent manic-depressive features at some time during their course. None of them showed mental deterioration. All had some insight. All improved, were discharged (one eloped), and although out of the hospital but a short time are reported to be doing well. None have been returned. Hysteria is certainly a prominent element in all these cases. Impulsive acts were present in all the cases; visions, hallucinations of sight and somatic complaints were common features. Anxiety, fear, and apprehension were present in all three cases. Anæsthesia and sensory disturbances were present in all cases.

Case No. IX.—G. G. H., age 23, married, United States, electrician. Admitted April 8, 1908; discharged August 30, 1908. First change noticed was three years ago following an injury to his head. One year ago shot himself, after having a few drinks and quarreling with his wife. On April 6 became apprehensive; was afraid he was going to be blown up by dynamite and sulphur, and was afraid of being poisoned. Was sent to a hospital. Tried to jump out of window (suicide); was uncontrollable at home and taken to jail; refused to leave his room to-day, became stiff and rigid, was mute, had to be carried to the train. On train he acted in a boisterous way, sang, laughed, cursed, struggled, attempted to escape, was unsuccessful, so became rigid and mute, had to be carried to carriage and lifted out, then walked in hospital. Sat in a praying attitude with hands together, slid to floor, went through a hysterical convulsion (opisthotonos), which lasted about five minutes. Then showed catatonic symptoms. Held hands in air (cerea flexibilitas-mutism) but obeyed commands, answered questions when commanded. Talked while being bathed. When put to bed he pushed his hands through a window glass near the bed; gave no reason for this.

For five weeks he continued cataleptic—mutism, refusal of food, negativism, hallucinatory attitudes, posing, hallucinations, somatic sense deceptions. Later he showed a depressed condition—depression, retardation, apprehension, anxiety, unsystematized delusions of persecution, illusions, somatic sense deceptions and delusions, some insight.

In August he was much improved but very changeable in disposition and mood; sometimes bright, cheerful, happy, almost exhilarated; at other times unhappy, worried, discontented; expressed no delusions, denied hallucinations. Had quite good insight, explained some of his actions, showed good judgment.

He was regarded as a case of dementia præcox with improvement or a remission, although the case was not entirely clear. He differed from

other cases of dementia præcox. The case at times resembled a manic-depressive attack. He improved much and is still outside the hospital, and said to be at work and doing well.

Case No. X.—C. F. J., United States, age 23, single. No occupation. Admitted April 10, 1908; discharged July 24, 1908.

*Family History.*—Mother neurotic, hysterical. Father an alcoholic, and insane.

Patient irritable as a child, made school progress, worked a short time in two places, did not think he received enough pay, so resigned. Since the age of twenty he has had no occupation, but has looked after some property for his mother; traveled and amused himself the rest of the time.

In 1905 was neurasthenic. Spent some months in California, but did not improve. Returned home and took up physical culture treatment—improved some. In 1906 went to Florida; there he became depressed, afraid, seclusive; on one or two occasions got up at night and went to a neighbor's; improved in a few days and was brought home; was well until July, 1907, when he had a similar attack lasting a few days. In March, 1908, he was neurasthenoid, became restless, did several peculiar things, was depressed, anxious about his health, disappeared from home on two occasions, and acted in an irrational manner while away. In April got out of bed, came downstairs, broke a glass door, walked out in the street in his night clothes, where he was found by his brother. He was confused, did not know where he was, called his brother other names, said, "Is this you, Mr. A——, who is this?" The next day he was quiet and remained at home. The following day resisted his brother and escaped from the house. Did several impulsive and foolish things. Was finally arrested, examined in jail.

*Physician's Certificate States:* "The patient said he heard voices in his ear that threatened him; that spells came over him sometimes, and he did not know what he was doing. He was restless and excited, wandered about the house, was stealthy in his movements and irrational in conversation." Upon admission was oriented, told of many things, boasted of what he had done, fabricated, but when closely questioned became confused and unable to explain former statements. Made numerous subjective complaints, was open to and easily influenced by suggestion. Mental examination showed apathy, mannerisms, silliness, impulsive acts and queer thoughts, which he could not satisfactorily explain; hallucinations of hearing, sight, dream and pseudo hallucinations, illusions, and some ideas in regard to another personality. He says at times he has periods of loss of memory. When he hears names he associates these names with himself in his past existence. He thinks he has lived in other lands in ages gone by. He says you might live and die, but the vital spark is transferred to some other sphere; it does not die but is transferred to another body in some other place, and in this way we have lived through different ages in Egypt, Rome, France, and other countries up to the present time. His orientation was good; he showed no mental

deterioration. Memory and retention good. Had some insight. Judgment was poor. He was discharged, improved, July 24, 1908, and still remains outside. He has always been neurotic, eccentric, unstable, has had numerous hobbies. Smoked to excess. No alcohol.

Case No. XI.—Dr. Watson's case. E. T., U. S., age 19, single. A mason's helper. Admitted December 31, 1908; eloped May 30, 1909. An incorrigible boy, sent to reformatory, and from there here. Here he has at different times shown apathy, negativism, mutism, catatonia; at other times manic symptoms. Before admission was said to be depressed and made an attempt at suicide. For a time opinion was divided as regards manic-depressive insanity or dementia præcox.

Nearly every night, and always following any excitement (dance), he is noisy, violent, has hallucinations of sight and hearing of an unpleasant nature, and thinks dogs and men are coming after him; he tries to escape, becomes impulsive, fights, struggles, finally quiets down and goes to sleep. The next day remembers nothing about it. He has frequent grand hysterical attacks, convulsions, etc., and all the stages given by Charcot.

Case No. XII.—Dr. Sandy's case. J. T., colored, United States, age 35, married, laborer. Admitted October 19, 1909. Normal until three years ago, then is said to have had something like a "stroke," followed by unconsciousness and partial paralysis. Since then his disposition has changed. He has been ill natured, quarreled with family, has not worked. The family state that he thought he had been in a railroad accident and lost both legs. One month ago he had another "stroke" and was carried home.

*Physician's Certificate States:* "When I saw him immediately after the attack he seemed dazed. No questions would be answered, incoherent mumbling, inco-ordination marked. Delusions of marital infidelity. Says he has lost money, a decline in mental power." When examined mentally he was at first dull and apathetic, then gradually improved and became brighter as the examination proceeded, answered more promptly; but at times returned to his dull, dazed condition. Expressed a number of expansive ideas; at the end of the examination he denied these, and said he never stated them. Orientation was imperfect; at times he acted as if he was entirely oblivious to everything about him, and as if he did not hear the questions. Sometimes has a rather dazed expression. He is very susceptible to suggestion. Has some insight.

Physically, he presents a flaccid paralysis of the right arm. Reflexes are all present in both arms, and about equal and normal. He claims both legs were paralyzed—not now, only the left leg is. Gait is shuffling, he drags the left leg slightly. Reflexes in left leg are increased. They are normal in the right. The leg paralysis is flaccid. No ankle clonus. He shows contracted visual field, red larger than blue, in left eye; at the widest points white at 70, red 45, blue 30, right eye, white 70, red 60,

blue 55. Although his arm and leg are supposed to be paralyzed and helpless, upon suggestion he can be made to run, jump, lift, and hold out heavy objects, and to otherwise use the parts in a way that requires considerable strength.

## Conclusions.

From personal experience hysteria seems to be connected with insanity in about 10 per cent of male admissions. If hysteria is much more common in females, it would seem that among the female insane it should be a very prominent and important factor. It is claimed by some that nearly all criminals are defective in some way. Several of these cases are criminals, others have committed criminal acts and have been arrested before being committed as insane. The question of responsibility comes up here. Practically all of these cases recover. Should they be held for the criminal acts committed? If, after commitment in a hospital, they recover should they be allowed their liberty or be indefinitely confined in an insane hospital? It would seem that they should not be held responsible for a crime committed while insane. If it can be definitely proven that they were sane when the crime was committed, and that the hysterical symptoms are the result of arrest, trial, and imprisonment, upon their recovery they should be tried and made to serve out their sentence. The old question of simulation and hysteria here presents itself again. It is necessary to be very careful upon the part of committing physicians to settle all questions in regard to simulation before they advise the court that the prisoner is insane, or was insane when he committed the criminal act.

The prognosis in hysteria is good. Cases of hysterical insanity do not deteriorate mentally.

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Papers and books by Janet, A. Meyer, A. Hoch, Jung, Woodman, Diller and Wright, Raecke, Prince, Coriat, and numerous English text-books, abstracts, and papers by various authorities on this subject, have been freely consulted.

# A MODERN CONCEPTION OF DEMENTIA PRÆCOX; WITH FIVE ILLUSTRATIVE CASES.

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The student of mental disorders is no longer satisfied with a crude classification into mania, melancholia and dementia, nor with more elaborate but purely symptomatological classifications. To Kraepelin is due in large measure the credit for grouping mental disorders according to the laws of their natural evolution; his name is especially associated with the creation of two large groups belonging to the functional psychoses, the one group with a favorable prognosis—manic-depressive insanity; the other with an unfavorable prognosis—dementia præcox. Through the analysis of those symptoms which are especially important as prognostic aids, these groups have attained a certain symptomatic prognostic importance.

The symptomatology of the large provisional group of dementia præcox is now sufficiently familiar; much work has been done in differentiating this group from other groups and in dividing it into sub-groups, and also in giving further definition to the individual symptoms. The psychology of the disorder has received much study, and attention has been drawn to the two main factors —the disorders of volition and the dissociation of the emotional from the intellectual life. On the other hand, the physical symptoms have been emphasized and histopathology has contributed some facts with regard to cortical changes.

In endeavoring to find out the nature of any disorder, the line of investigation is often already determined by the nature of the clinical data; thus in the presence of a fever one thinks of working along the lines of ordinary bacteriological technique. When one endeavors to find out the essence of a complex disorder of the biological economy like dementia præcox, the line of investigation is not so clear; the few facts available are often interpreted not so

much in the light of clinical experience as in the light of *a priori* theories.

When it is a question of formulating a conception of dementia præcox, two widely divergent attitudes are encountered. One set of investigators consider that the most hopeful line of investigation is to be found when we regard dementia præcox as essentially similar to general paralysis, where nerve tissue is destroyed by the presence of undetermined poisons, and where in the slow deterioration of the nervous system many mental pictures may crop up (Kraepelin). These mental pictures may be of diagnostic help, but are considered as irrelevant features from the dynamic standpoint and not as important guides to the pathogenesis of the disease. A very different point of view is that of those, who do not *a priori* rule out the dynamic importance of psychological factors, nor believe that it is only in hysteria that this principle is available (Meyer). They do not divorce psychological reactions from the other reactions of the individual, but consider them merely as the most complex of human biological reactions. The tendency of those who adopt the former point of view, i. e., the view that general paralysis is the paradigma of dementia præcox, is to remain content with rather formal clinical differentiations, to refer to the presence of mannerisms, stereotypies, odd reactions, hallucinations, delusions, etc., without paying much attention to their content, and without endeavoring to ascertain what relation such content bears to the life history of the individual; it is assumed that such reactions are more or less meaningless, not to be psychologically analyzed, and one looks away from them to the various pathological laboratories for further light on the pathogenesis of the disorder. It is important to note that this assumption depends upon a general philosophical attitude rather than upon any established body of observations. Studies on metabolism in mental disorders have been numerous; the blood has received attention, every constituent of the urine has been estimated and wide-reaching conclusions drawn; the various glands with internal secretions have furnished ready material for hypothesis. Methods have often been crude, and with regard to the examination of the urine it is interesting to note what Folin, at the end of his report of a very conscientious series of investigations, says: "From a destructive,

negative or critical point of view it is believed that the data given prove the untrustworthiness of all the metabolism experiments, old and new, which report a 'characteristic increase' or 'diminution' of any of the urinary constituents included in the research as associated with any particular one of the ordinary mental disorders. It is not claimed that such characteristic abnormal metabolism may not exist, but simply that the experiments recorded in the literature are insufficient to demonstrate the fact."

Perhaps the most conclusive evidence of the want of any reliable series of observations to warrant the formation along these lines of any hypothesis as to the pathogenesis of dementia præcox is the statement by Kraepelin himself: "The most probable hypothesis in view of the relations of the disease to the developmental period, to menstrual disorders, to the function of reproduction, to the climacteric, is, in the absence of any recognized external cause, to think of an auto-intoxication which possibly might stand in some more or less distant connection with processes in the sexual glands." That this hypothesis, so vague as to be worthless, should be formulated at all in the present state of our knowledge shows that the attitude of the individual in the matter is apt to be determined by general principles rather than by any adequate body of observations. In the absence of the latter, surely it would be better to forego any hypothesis rather than to adopt one which is apt to give an undue bias to clinical investigation.

An entirely different conception of the disorder from that presented by the advocates of theories of auto-intoxication was the one submitted by Adolf Meyer before the British Medical Association at Toronto in August, 1906. This conception was based not merely on a study of the symptoms of the disorder, but also on a careful analysis of the whole life history of the patient. The disorder may seem to come out of a blue sky, but careful investigation enables one to see in the disorder the culmination of a long period of bad mental hygiene. On the surface the individual may have met the demands of daily life sufficiently well to avoid the special notice of his friends and relatives, but beneath the surface mental life is found to have been far from smooth. Instead of facing squarely the difficulties of life and of their own constitution these individuals have been prone to indulge in unhealthy sub-

stitutes for normal reactions. They are apt to meet sexual difficulties by taking refuge in masturbation, sexual ruminations and a generally unhealthy mode of handling the topic. Instead of being frank in other respects, they are apt to brood over their troubles, to see meanings that are not intended, to neglect the ordinary balancing factors of a healthy life; beneath their ordinary daily activity there is usually a variety of internal discrepancies quite incompatible with that feeling of satisfaction which goes with good bodily and mental health.

Meyer frequently found that the patient was "habitually dreamy, dependent in his adjustment to the situation of the world rather on shirking than on active, aggressive management, scattered and distracted either in all the spheres of habits or at least in some of the essential domains of adjustment which must depend more or less on instinct or habit."

August Hoch, of Bloomingdale Hospital, has made a careful analysis of the personality of those individuals who had later developed dementia præcox; he found that the majority of cases deviated markedly from a frank, open personality.

Jung, of Zürich, has shown that in many cases one may penetrate the trivial and fantastic form of hallucinations and delusions and trace in them the expression of a serious and important content; the distorted behavior and trends of thought of the patient may often be shown to bear a vital relation to the previous life of the individual. Owing to this analysis, Jung has given a psychological meaning to many symptoms which previously were, and by many still are, considered to be the meaningless expression of the activity of disordered nerve tissue, incapable of any analysis along the lines of normal psychology.

When, therefore, we see that the symptoms of this mental disorder consist in the outcropping, in a peculiar, distorted and frequently symbolic form, of the thoughts and ruminations and longings of the individual, and when on the analysis of that individual's inner life we find that these elements have been a disturbing factor throughout, and when we find that this disorder appears to arise in individuals of certain temperamental peculiarities, our conception of the disorder tends to be largely of a psychological nature. At any rate, if we are to keep close to the facts of observation and not to be led away by vague hypothesis, we shall express what we

know about the disorder largely in psychological terms. In doing this we in no way neglect the importance of the physical symptoms incidental to the disorder. The fact that one attributes importance to psychological factors does not mean that one neglects observations on metabolism or other bodily functions. Psychological reactions must be looked upon as merely the most complicated biological reactions; in such reactions there is always a somatic component of more or less relative importance. The disorder of the biological economy in dementia præcox appears to be closely related to disorders of these most complex human reactions; to try to express the disorder of the biological economy in dementia præcox in terms of a lower denominator than one which includes psychological reactions, would be to fail to do justice to the facts of observation. If we adopt the above conception our attitude towards this disorder and allied conditions becomes much more practical. Unhampered by empty hypothesis as to the mutual relationship of mind and body and refusing to express the facts of observation by an inadequate denominator, we are able to direct our activities wherever facts can be modified. When we understand better the development of cases of dementia præcox, the soil upon which it is most likely to arise, the educational and social factors which appear to influence it, the nature of the troubles which seem to precipitate it, the physical disorders which accompany it, we shall perhaps be able to aid more effectively the development of those individuals who give evidence of ominous constitutional traits, and be able to contribute more guidance towards the mental health of the community. Even where the disorder has been established we shall not in a routine way give a bad prognosis on account of certain ominous features; we shall rather weigh all the facts in the development, consider how far the circumstances are modifiable, work upon what is still available and be guided in our prognosis by the result of these efforts.

It is frequently difficult to trace the development of a case of dementia præcox. The patient has not as a rule talked frankly over those very difficulties which are most important; the symptoms of the disorder itself frequently exclude any satisfactory co-operation on the part of the patient; it may no longer be possible from the material obtained to reconstruct the situation out of which the psychosis developed.

In the following cases, although the details may be lacking, the main outlines of the development are sufficiently clear to exemplify the conception of dementia præcox outlined above.

In the first case we can trace in outline, if not in detail, the general development of the mental disorder in a person with certain defects in her constitution and whose life has been poorly regulated, especially in view of the dangers to which her make-up predisposed her.

Case 1.—The patient is a woman of 35 who at present shows defective judgment, affected behavior, a mood which varies between a certain coquettishness and marked irritability; she talks in a facile way of rather foolish plans for the future, and maintains the reality of some of her previous hallucinatory experiences. As a child she was intellectually of average endowment; she was rather quiet and obstinate, sensitive and easily annoyed, rather selfish and apt to think herself better than her neighbors. She would be much more pleasant to outsiders than to members of her only family. She tended to shirk work and often appeared to be day-dreaming; she took no interest in religious matters. No definite information was available with regard to her early sexual development, but apparently she had no feeling for the ordinary sanctions of sexual morality. About the age of 20 she was seduced and lived with her seducer for two and a half years. A few years later she became the common-law wife of the man whose name she now bears. The patient was a Roman Catholic, the husband a Jew. A child was born, and there was considerable discussion as to whether he should be baptized or circumcised. After the birth of the child the question of her irregular relations occupied her mind considerably; there was much friction between her and her husband, and for several months apparently, owing to their strained relations, her sexual instinct was not satisfied. In November, 1906, after somewhat odd behavior, she began to hear voices accusing her of improper intimacy with the rent collector, an attractive man. The voices said that he was in a certain barn, and she tried to enter it in order to defend her honor. She felt that the rent collector was attracted by her and wanted to make love to her. She was taken to a hospital for the insane, and during the next six months she had auditory hallucinations of sexual content. She frequently heard the voice of the rent collector making love to her in a very boisterous manner; other voices accused her of horrible things, e. g., said she would give birth to a dog-faced baby. At times the hallucinatory condition became much less marked, and she would even admit that she had been insane. She had once stuck a pin in the child's penis when he was an infant; in the hospital she spoke of having an operation on the child; she seemed to have the idea that if the operation were done the child would be a Jew child. She was discharged 11 months after admission, as her husband was willing

to take her home. She still maintained the reality of some of her hallucinatory ideas. After leaving the hospital she began to talk of the rent collector, could not stand her husband. She began to think that her boy was not sexually normal, threatened to circumcise the child if no one else would do it. About two months later she was again committed to hospital. She complained that she still heard voices talking about the same sexual topics. The patient took her detention calmly, was rather affected in behavior, smiled rather easily. She talked freely about her troubles, but occasionally was somewhat diffuse, and it was difficult to grasp the exact meaning of her fantastic religious and sexual ideas. The two main trends in her mind concerned her longings for the rent collector and her worry with regard to her boy. Her actual worries over the boy had become transformed into a somewhat complicated series of delusions. The difficulty raised by the child being born of a Roman Catholic mother and a Jew father was resolved by the comforting belief that the child was meant for God; it represented the union of two religions. The little injury which she had caused the child was in some way a foreordained occurrence in order to bring about circumcision. On the other hand, she felt that the child might grow in a mysterious way, he might become a criminal, might stick pins in other children, seeing that he knew the difference between Hebrew and Christian children. The patient talked with no reticence of her past life; she did not appear in any way to regret the irregularity of her sexual habits; she attributed no blame to herself. After 7 months in hospital the patient had made considerable improvement, so that her husband took her out on parole, but owing to her peculiar behavior she returned after nine days. It is now almost one year since the patient has returned from parole.

Physically, the patient has always shown satisfactory nutrition; she has complained only of a slight feeling of nervousness. Apart from a mitral systolic murmur, there has been nothing to note in the condition of the internal organs. There have been no neurological symptoms.

In this case we have to deal with a woman of average intellectual ability, but showing a want of certain of the balancing factors which are of importance in the regulation of life. At a period when her relations with her common-law husband were very much strained, when her difficulties of adjustment with regard to her sexual life and the position of her boy were at a maximum and when her sexual instinct was unsatisfied, she passed into a psychosis in which the main hallucinatory and delusional elements bore a very direct relation to the actual difficulties of her life. The psychosis could obviously not be adequately understood except in the light of the patient's constitutional traits and the actual experiences and difficulties of her life. To a certain extent the psy-

chosis represented a method of escape from the actual tangle of her life and fulfilled for her certain wishes not realized in her actual life.

Case 2.—The second case is that of a young woman of 34, who at the present time shows a certain degree of deterioration of her general interests and standards of conduct, and who has many poorly elaborated delusions of a religious nature. As a girl, she was bright at school and interested in her lessons. On leaving school she was able to earn her own living as an efficient machine operator, notwithstanding the residuals of a hemiplegia, probably of embolic origin. In her social life she was not known to have shown any marked peculiarities; she was not, however, considered quite as bright as her sisters. Although a Protestant, she began at the age of 20 to take a great deal of interest in the Roman Catholic church. From a very early age she was addicted to the habit of masturbation, but when checked by her mother she did not seem to reproach herself much for the fact. No definite precipitating cause for the onset of her psychosis could be ascertained; her sister thought she was disappointed over the marriage of a friend whom she had expected to marry. Towards the end of 1907 she gave up her position, was quiet and despondent, complained of weakness. She said that there was something on her mind, and then told her mother that she had carried on the habit of masturbation since childhood. Owing to her depression, she was committed to Manhattan State Hospital. The patient has been more than a year in the hospital; for the first month she talked in a somewhat despondent strain of her bad sexual habits, and told how her mind had always been occupied with rumination on sexual topics, with longings for marriage, which she satisfied by masturbation. She said that previous to admission she had felt that people would turn and look at her, and that her people noticed that she was getting crazy. When the woman physician examined her she thought that it was to draw the blood from her head and make her brain stupid. After a few weeks in hospital the patient, who had gone very little to church, began to express rather exalted religious ideas; she felt that she was in hospital in order to take away the suffering of every person; now she belonged to no church; she must rely upon God. She uttered many empty religious statements, said that her mind ran on the truth, that she depended on God, that she wished to go out in the world and heal the sick, but especially the sinful. Her mood was extremely superficial and variable; at times she talked in a tone of despondent humility, at other times with an air of satisfied religious pride. She made many empty religious statements, as the following: "I refused good from you yesterday and kept out your good influence, I won't let God come to me, I have the secret of life, I have the Holy Grail." She said that she saw the law of gravitation here; when people passed her they lifted their nostrils and saw that she was not a good person; she was governed by every mind in the place.

Her mind ran to a large extent on sexual topics; she talked of having had beautiful dreams, some of a religious, others of a sexual nature. She was still addicted to bad sexual habits. No good analysis could be got from the patient as to the exact steps through which she had passed from her condition of depressed self-reproach into one of religious exaltation.

Physically, the patient presents the residuals of a right-sided hemiplegia; apart from occasional palpitation due to a valvular cardiac lesion, the patient has been in excellent physical condition during her residence in hospital.

In this case we have a woman in whom the sexual instinct has been a disturbing factor from a very early age. In the psychosis there were side by side despondent references to this habit and to the consequent feelings of shame, and an attempt to compensate for this want of inner harmony by empty religious ideas for which the life history of the patient had furnished no sufficient material. The nature of the psychosis could not be considered as irrelevant to the constitution and the whole life history of the patient, characterized as it was by bad mental hygiene. In this case the development could only be followed in broad outlines, as there were insufficient data available with regard to the patient's life.

Case 3.—In the third case the inner development of the disorder can be traced in the same broad outlines, but the patient is not willing to cooperate in a psychological analysis of the development. At present, although she does some work efficiently in the hospital, her whole interest is in religious topics. She reads nothing but religious books; she refuses to go to entertainments; her chief desire is to enter a convent. She only occasionally is in a mood which permits some discussion of her earlier longings and ambitions. Six years before her first admission she had broken an engagement with a young man. Of late she has written to him as her spiritual husband, and she has usually referred to his wife by her maiden name. She will not discuss this topic at all, so that one does not know the exact steps through which she has passed to finally take refuge in a somewhat empty religious life where the actual disappointments of her life are ignored and replaced by slightly mystical ideas which serve to fulfil her wishes. The main facts in the history of this patient are as follows:

The patient as a child was healthy and was considered bright; she received a somewhat limited convent education; no details as to her early reactions are available, but apparently she was always of a quiet disposition and very scrupulous. For many years she earned her living by needlework; she has always led rather a narrow life, and been more or less taken up with religious matters. If she went to any place of

amusement she would say that she had been frivolous and would pray a good deal. She has always been rather dignified, secretive and a little prudish. She would be extremely disgusted and shocked by things that, as a general rule, did not shock other people. She always resented everything that was in the slightest way improper. When her home was broken up she boarded, not in regular boarding-houses, but in deaconesses' homes with religious routine where she was probably underfed.

About the age of 26 she became practically engaged to a young man who appears to have been a very satisfactory individual. For some reason she left the town where he lived, and later broke off the match and entered a convent; she was advised to leave after a month on account of her nervous condition. Both before and after entering the convent, she worried over her sister having an illegitimate child. She was able to earn her living during the next four years, chiefly by needlework. In 1905 she became nervous, and at night had peculiar feelings as of animals running over her; she also suffered from headaches. She improved after three months' treatment in a hospital; she then took up gymnastics, but in 1906 she felt as if she had strained her side. She slept poorly at this period. In April, 1906, she was operated on for floating kidney; she became sleepless, saw visions at night, became depressed over her past behavior, was despondent as to recovery. She went to the country to promote her convalescence; her depression continued; she occasionally thought she heard her name called. In September she was in a sanitarium; there she fretted and picked her skin. She was first admitted to Manhattan State Hospital in January, 1907. She showed pronounced depression, moaned in great distress. She felt that she was lost; she talked of some vague fear, said that her mind had been in an imaginative way. She showed some confusion as to the date, was rather hazy in the time relations of remote events in her life. Her mind was completely dominated by depressing ideas, and she made many hypochondriacal statements—thought there was something inside her, that she had a tape-worm, perhaps cats or mice or snakes; something seemed to jump in her abdomen and crawl up her throat; she continually picked her face; she despaired of God's mercy, said that a nurse in the previous sanitarium had called her "You old antichrist." After four months the patient began to show some improvement, became more cheerful and industrious. She still was sensitive to any remarks made, thought they referred to her. As she improved she was able to give an account of her early development, and told how much she had been dominated by religious preoccupations. In the convent school she felt more stupid than the other girls; the religious instruction gave her a feeling of fear; she was always of a scrupulous nature, and after leaving school worried about the alcoholism of her brother, the illegitimate child of her sister. Intellectually, she was not bright. When she began to read the Bible for herself her mind dwelt on the more forbidding aspect of the doctrine in it. People used to tell her she was dreamy looking, that was because she was brooding on these

religious matters; she had never been quite free from religious worries. She denied that she had ever been addicted to self-abuse. The reason why she had given up her engagement was because of a certain feeling of unworthiness. During the period when she first fell sick, as she lay awake at night she used to think of God all the time; she would try to make a picture of what she had seen in church, of Christ the consoler. She fell into doubt about the salvation of her soul, and began to reproach herself for her behavior in the past.

The patient made such marked improvement that she left on parole early in 1908. She did not, however, adjust herself well to the ordinary routine of life in her friend's house, did not wish to dress or to eat, stood about as if in thought, was very stubborn. She wrote a letter to her previous fiancé, about whom, as a matter of fact, she had been worrying before leaving the hospital; her sister had told her that he was married and happy. During 1908 the patient was not able to get on well; her thoughts appear to have been dominated by the one topic of this young man. She talked about him freely and, while doing housework in a seminary for priests, in every one of the priests she seemed to see this gentleman. Her religious trend was also very marked, everything that she did was by God's will. She went to the town where her former fiancé lived and asked for his wife by her maiden name. She started to work there; she began to talk of this man as her spiritual husband. Owing to this conduct, and to exaggerated religious observances, she was again brought to the hospital. Since readmission she has shown a rather uncompromising attitude, refusing to face the actual facts of her experience, living in a rather mystic world in which her old fiancé is her spiritual husband, and in which her one duty is to be true to religious observances.

Case 4.—The fourth case is that of a seamstress, 28 years of age, whose psychosis is now of two years' duration. Her constitutional traits are of importance. In the intellectual sphere she was sufficiently well endowed; her vulnerable points lay in other directions. She was rather conceited, prided herself on her general appearance and on her reputation among her associates; she was sensitive to slights, scrupulous about the feelings of others. She disliked any indelicate reference to sexual matters; she was too modest to undress before her sister; she was scrupulous about her associates. She lived a rather narrow, uneventful life. In 1905, when she was 24, the first important upsetting factor entered her life. There was at that time forced on her the acquaintanceship of a man, who at the same time repelled and attracted her; he attracted her through his intellectual gifts, he repelled her through his familiarity and his unchivalrous way of referring to women. The attraction gained the upper hand, and for some months he was much in her society, and even borrowed money of her. One day, in raising her playfully up by the shoulders, he caused a somewhat severe injury to one shoulder. In receiving treatment for this injury, she had to spend money

which she could ill afford; to her great chagrin she found that her friend was a divorced man; she was much humiliated by the fact, did not mention it to her sister. A few months after the accident to her shoulder her friend left her without saying good-bye, and owing her about $12; the patient's attitude towards him now distinctly changed and she had no more correspondence with him. Later in the same year she became very friendly with a young woman, who appeared to have a good deal of trouble in her married life, and was preparing a case against her so-called husband. The patient espoused her friend's cause, lost sleep and food in helping her friend, and became much fatigued. Some time later she found that her friend had never really been married. The patient took this very much to heart, and soon afterwards she began to worry over her previous friendship and the accident to her shoulder; she became so nervous that she was sent to her brother for a vacation. She felt that she was unworthy to go to church, that God was cross with her; she tried very hard, but unsuccessfully, to shake off the memory of her association with her two previous friends. She began to feel responsible for the calamities which she read of in the papers, such as a terrible fire; one morning, when the sun streamed in at the windows, she thought the whole world was on fire. She was taken to a hospital for the insane; there she was very much excited, talked in a disconnected, irrelevant manner, refused food and was tube-fed with great difficulty. The only two samples of her utterances during this period which we have are: "It is funny—Mary Magdalene's eyes were like mine." "You are a physician, it is up to you to know what the trouble is—how do you diagnose the case—they are calling Christ—she is a good girl" (looking at nurse).

The patient continued for some time in a catatonic condition; she was resistive, negativistic and mute, held saliva in her mouth, was untidy in her habits. After a few months she improved somewhat and was transferred to another hospital. There she showed numerous mannerisms, sat with the left arm raised over her head, her muscles were tense and rigid; she showed pronounced echolalia. She was restless and agitated. For some time she continued to grimace, to answer in an incoherent and puzzled way, but improved so much that she was able to be discharged to the care of her sister nine months after her first admission to the hospital.

At home she soon began to have unpleasant feelings, she felt that the bed was sinking, thought that people were looking at her on the street; she began to harp on her treatment in the first hospital, and told impossible tales of her treatment there. She began to refuse food and exercise, and 10 weeks after her discharge she was again committed.

The patient has now been in Manhattan State Hospital one year, and her condition, on the whole, has shown little change in character, although it has varied in degree from time to time. She blames all her trouble on her association with the two individuals referred to, and on the injury to her shoulder which she received. She was taken to the first

hospital because she was nervous, and there she received extraordinary treatment; they put snakes in her body, lizards in her stomach, the room moved up and down; she was left for three days without seeing anyone; they flashed bright lights in her eyes. The patient admitted that she was not well on admission to that hospital, but persistently maintained the truth of her distorted memories, and bitterly resented any attempt to explain them, considering that this threw doubt on her veracity.

In discussing the development of the psychosis, the patient for some time refused to admit that she had ever been in any way attracted by the man who injured her shoulder. She would not admit at first that her feelings had changed from affection to disgust. She laid a great deal of emphasis on the injury to her shoulder and on the pain which still persisted. As there seemed to be insufficient objective cause for this pain, her emphasis on it was considered to be an endeavor to unload on the physical symptoms the mental discomfort caused by her relations to this man. The electrical reactions were tested and found to be normal. After the second test, and after the physician's view of the trouble was placed before her, the pain disappeared and has remained absent for months. At the present moment the patient maintains a somewhat bitter attitude towards those who detain her. She thinks that they doubt her word, she says that she is the victim of a foul conspiracy. She keeps very much by herself, and sometimes when annoyed at the nurses she used very profane language. For many months she refused to go to any entertainment on the ground that she had not gone to any when living at home. When finally persuaded to take an amusement as a doctor's prescription, she enjoyed the entertainment thoroughly, and has often gone to others without requiring to be coaxed.

We see in the above case the development of a psychosis in a girl of fair intellectual ability, but living a rather narrow, self-sufficient life, without evidence of much elasticity and without taking advantage of the ordinary balancing factors in life. Her adjustment, however, to the demands of her life was sufficient so long as these demands were strictly limited. The factors which came in owing to her unfortunate associates were apparently beyond what her mental habits had trained her to cope with, and after a considerable period of disturbed equilibrium she developed a well-marked catatonic excitement. It is interesting to note that the only two samples of her utterances during her catatonic period in the first hospital point to her dominant feeling of humility and disappointment.

Case 5.—The fifth case is that of a woman of 41, as to whose disposition as a child little is known, except what she herself tells us. After leaving school she worked out as a domestic, and it was soon observed that she

never remained long in one place, although she worked efficiently. She soon began to tell her friends that scandalous rumors were circulating about her; she began to imagine that she was pregnant; she became very religious; several years before admission she imagined that the papers published scandalous stories about her and her bishop. She saw her father's picture in the papers, naked. For two years before admission she went regularly to an employment bureau, but refused all places; she went in order to scrutinize the morality of the other women who went there. For many years she has preached sexual morality to all her friends and acquaintances, and has on this account got into trouble.

The patient claims that she is the Virgin Mary, and that she has managed to survive various schemes of the clergy; since she heard a sermon in 1902 she has believed herself to be the only one person ever born free from original sin. The patient gives an interesting account of her life, which shows what a disturbing factor the sexual element has been, and how poorly she has been able to adjust herself to this. As a child she conceived a disgust at sexual relations, owing to what she saw in the cramped quarters of her parents' home. About the age of 20 she had a vague feeling of scandalous rumors being afloat with regard to her, then later she had for years compromising abdominal sensations originating in an incident when she had imitated a pregnant woman. These sensations interfered with her actual efficiency; she was less able to work when observed by others. She later had dreams of a sexual nature with religious coloring. Several years before admission she became conscious of her holy nature, and became more and more engrossed in the question of the sexual morality of her neighbors.

In this case we can also see how the mental disorder has been largely due to the disturbing influence of the sexual instinct and the want of a healthy manner of handling this topic. Beneath the surface obviously were prolonged ruminations on the topic; above the surface were prudishness and a reaction of disgust. In the endeavor to compensate for the submerged ruminations we see the various steps—prudishness, then the belief that she was the only pure woman, then that she is the Virgin Mary. The submerged trend broke through in crude sexual dreams.

The presentation of the above conception of dementia præcox is apt to be misconstrued. To those who work continually with the categories of the physiological and the chemical laboratories there seems to be a complete want of contact between the complex disorders of habits and adaptations of individuals, such as are exemplified in the histories recorded above, and the physical symptoms which have attracted so much attention. These investigators

do not realize that this want of contact is their own product; they have divorced the physical symptoms from the setting in which they occur, they have studied them as if that setting were irrelevant, and on the basis of the results of their studies they have constructed hypotheses which eliminate all dynamic importance from the setting of the metabolism disorder.

The conception of dementia præcox brought forward by Meyer is an endeavor to restore the facts of these investigators to their setting, and to render the study of the disorder more concrete by taking into consideration the whole situation; we are thereby in a position to attain a truer dynamic grasp of the disorder and have reached a standpoint from which a wide prophylactic movement becomes an inspiring possibility, an important duty. The alienist is thus brought into close co-operation with the sociologist and the educationalist, and he should enter into this co-operation not empty-handed, but with a well-analyzed store of clinical material.

Such are the wider issues of the problem of dementia præcox and allied disorders, issues which have been neglected by those workers who have seen in the symptoms of the psychosis merely the expression of the disordered activity of poisoned nerve tissue. This broader conception of the disorder in no way fails to do justice to the observations which have been gathered by those who have taken general paralysis as the paradigma of dementia præcox. It is simply a statement in broad outline of clinical facts, it is not a pretentious hypothesis which professes to explain the detailed steps in the development of the disorder; it introduces no hypothesis as to psycho-physical correlation nor attempts to determine at any period of the disorder or in relation to any individual symptom the exact importance of the somatic component; it does not pretend to formulate a complete statement as to the actual nature and mutual inter-relation of the somatic changes. All these problems are of distinct importance and it is only when they are solved that we shall have a complete knowledge of certain aspects of the disorder; work along such lines may yield useful indications as to treatment.

It is hoped that the explicit admission of the value of metabolism studies in their own proper place may obviate the stricture that the conception of dementia præcox outlined above is "too psycho-

logical." Alienists should surely be the first to recognize that human biology, if it is to embrace adequately the facts of experience, must be psychological; psychology is not a branch of philosophy, but that department of biology which deals with the most complex reactions.

## Summary.

The main argument in this communication may be summarized as follows:

1. The formation of the provisional group of dementia præcox marks an important advance beyond a mere symptomatological classification; the underlying principle is that for a useful classification one must take into consideration the whole evolution as well as the symptomatology of mental disorders.

2. The general symptomatology of dementia præcox has received much attention and is now sufficiently familiar.

3. Many authors, impressed by the bizarre, apparently meaningless nature of the distorted behavior and utterances of the patients and by observations on their disordered metabolism, have regarded the symptoms as merely the incoherent expression of the disordered activity of poisoned nerve tissue. That such a hypothesis is based rather upon *a priori* principles than upon any adequate basis of clinical fact is evident from the extreme vagueness of Kraepelin's own hypothesis.

4. Meyer has formulated a conception of the disorder which takes into consideration many facts which have been neglected by those who have been dominated by auto-intoxication hypotheses. This conception expresses the fact that the psychosis is the culmination of a long-continued period of unhealthy biological adjustments in individuals who constitutionally are apt to meet their difficulties in an inadequate manner. The symptoms cannot be understood unless a thorough analysis is made of the constitutional traits of the individual, of his habits in the widest sense of the term, and of the actual difficulties which have precipitated the onset of the psychosis. Jung has traced in detail some of the steps in the distortion of the patient's behavior and ideas.

5. This biological conception of dementia præcox encourages the physician to take a practical attitude and, after a thorough analysis of the situation out of which the symptoms have arisen in

the individual case, to push his therapeutic activity wherever the circumstances are open to modification, unhampered by any hypothesis which excludes a dynamic psychology.

6. This conception is still more fruitful in the indications it furnishes for prophylaxis along educational and sociological lines.

7. The same principles which have led to the above formulation of the nature of dementia præcox should also be applied in the study of the other psychoses.

# THE GANSER SYMPTOM AND SYMPTOM-COMPLEX.

## REPORT OF FIVE CASES.

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Since attention in this country was called to the Ganser symptom by Dr. Adolf Meyer in the Pathological Institute for the New York State hospitals in 1904, Dr. A. H. Ruggles' article in the American Journal of Insanity of October, 1905,[2] and the able report of a case by Dr. Henry P. Frost at the 1906 meeting of this Association, published in the American Journal of Insanity of January, 1907,[3] an interested outlook for this symptom has been kept by the present reporter. It is undoubtedly an hysterical manifestation, and it is with some hesitation that five cases of this admittedly rare disorder are presented occurring in a year's admissions. In none of these, however, was it developed other than spontaneously, nor was there a question of malingering—even in the case of one patient who afterward claimed that he had feigned the symptom.

The typical Ganser symptom-complex is a confusional state, with hallucinations, of rapid onset and short duration; hysterical features are present, and the patient, in addition to silly answers and talk, misnames objects with analogous names, or describes their attributes in a roundabout manner; the replies to questions are often incorrect or absurd, but show a good understanding of the question and a near relation to the correct reply. To this latter symptom the term "Danebenreden" has been given by the Germans. Ganser states that on recovery there is amnesia for the attack.

The symptom of "Danebenreden," roundabout talk, or "symptom of approximate answers," as Dr. Ruggles has aptly termed it, is said to have been observed in dawn states on awakening from hypnosis, hysteria, manic conditions, melancholia, alcoholism, dementia præcox, imbecility, and to be most common in criminals and malingerers.

Case I.—M. N. Admitted March 15, 1907, from New York State Reformatory at Elmira; male; single; 18; nativity, New York State; father, Canadian; mother, New York State.

*Family History.*—Patient is the ninth of eleven children. A sister had epilepsy in childhood. On paternal side "there has been insanity, but very distant." Mother's family "nearly all have heart trouble."

*Personal History.*—"Typhoid pneumonia" at the age of seven; addicted to excessive cigarette smoking from an early age; attended school from six or seven to fourteen or fifteen years of age; his mother stated that he was bright in school, but his education was found to be very defective. After finishing school, he ran away from his home (on the St. Lawrence river) to Rochester, working in machine shops, and returned to work in a hotel. He had become addicted to the use of alcohol and had stolen before. One night he robbed a man in the hotel, was caught, convicted of burglary in the second degree and petit larceny, and sentenced to the N. Y. S. R. at Elmira with an indeterminate sentence of ten years maximum.

*Psychosis.*—The medical certificate from the Reformatory states that he had an attack of mania the previous month, and about ten days before admission became excited, screaming, spitting on the floor, making attempts to get out of bed, and was kept in a restraining sheet. He was uncleanly and filthy, attempted to eat his feces, urinated and defecated in bed, masturbated at every opportunity, and yelled and fought the nurses. His conversation was incoherent and he did not reply to questions. He said, "I can hear my mother's voice—I love it—I love it—there she goes—goes—goes—come here."

*Physical Status.*—A fairly well developed boy of medium height, with stigmata of degeneracy; high V-shaped palate; irregularly implanted teeth; head flat posteriorly; poorly nourished with slender musculature; hæmoglobin, 85 per cent; recent vaccination and circumcision both unhealed, probably accounting for a temperature on admission of 100.6; pulse, 100; respiration, normal; this rise of temperature subsided in four days. The subjective sensations were of depression and confusion, and a feeling of his eyes changing—"they feel queer and I can't see well; it seems as though they were crossing." There was an insufficiency of the right external rectus muscle, causing a frequently recurring strabismus to account for this feeling. Pupils normal, and no limitation of visual fields; twitchings of the left lev. lab. sup. alæquenasi were also observed; patellar reflexes markedly exaggerated—Achilles slightly; fine tremor of tongue, face and hands; slight bronchitis; appetite poor; tongue coated; mouth covered with sordes; breath fetid; constipation with scybalous stools.

*Mental Status.*—Restlessness; distractibility; suggestibility with a semi-delirium and the Ganser symptom-complex were manifested for four days after admission.

He was carried into the hospital, being very weak. His spontaneous production was very rambling, but gave some evidence

of flight of ideas, as follows: "You have started me on the road to hell—You started from a rattler—You started from a snake—You are a rattlesnake—Go in and get on the glass table" (evidently referring to his circumcision at the Reformatory), and his language became very vile, showing coprolalia without apparent appreciation of its meaning. What is your name? "My name is Carlisle" (more obscenity). "Give me that sewing machine" (no similar object in sight). "My father had a sewing machine at Fishers Landing, and I had a bicycle and fell off and shaved off my fingers in the spokes." Here he leaned forward and touched the attendant's uniform coat button with his tongue. He was not oriented for time, place, or person. His mood was that of anxious depression and he frequently spoke about cutting his head off. The following shows the Ganser symptom of "Danebenreden." Various objects were called to his attention and he was asked to name them. He would reach for everything shown, saying, "Give it to me," before replying. Pen knife? "That's a jack knife; that's a razor, shave my head off" (motioned as if to cut his throat). A pair of spectacles? "That's—A man can see through it with both eyes" (making circles with his fingers and holding them up to his eyes, imitating the appearance of a person with spectacles). Cap? "He pulls it right off his head" (imitating bowing with a cap). Electric light? "That's a curer of blue lights, let me get up and turn it on; give me that razor strops—true." Chair? "Mop-handling Jew, let me get up and I will go over and sit down on it." Cigarette? "A sneakingrette, a smoker of liars, a smokerette." Book? "Dictionary; give it to me and I'll pick 'em all out!" Key chain? "Jail man's chain; chain down my head and give me a hypodermic." Watch? "That's a timepiece; you start from the Grand Central Station and—" Match? "That's a smoker—a piece of—give it to me and I'll light it." Pencil? "That's a stinker of lies; give it to me and I'll show you what to do with it." He took it and made a motion to write, but when given a piece of paper and asked to write, made a vulgar picture of female genitalia, and imitated the motion of masturbation. Bunch of keys (rattled before him)? "That's a rattler of stinking snakes." Dollar bill? "That's one hot ball." The following day called it "one green." Bottle? "That's a killer of lies; that's a kidney cure." Newspaper?

"That's to read." The word opium was suggested, and he said, "One opium—hop joint—hop box—hop chewer—curer of lies." How many are there in your family? "There are a thousand in our family; you will know me a thousand years from now." How old are you? "I am a thousand years old." (He imitated several somewhat complicated motions of the examiner's hands.) The following day named objects as follows: Empty cartridge? "Shoot me dead; shoot my head off." Pair of shoes? "Shine them everywhere you go." Toothpick (snapped to attract his attention)? "That's a snapper to pick all my teeth with." Knife? "Cut my head off." Why do you want me to cut your head off? "Because I am the dirtiest man in the world." Lead whistle? "Blow it." Fifty-cent piece (with the eagle towards him)? "Eagle." Match? "Smoke it." He continued to talk a great deal about "rattlesnakes" and "a curer of lies." Four days after admission he began to be a little clearer, saying, "Doctor, bring me back to my senses again, I am getting clearer every day." He still continued to talk about rattlesnakes, cutting his head off, etc., and said, spontaneously, "I know you" (beginning to cry). "I stole your two dogs; poor boy, chop himself all to pieces." He did not know how long he had been here, and could not recall names, but said that his birthday was on June 6, and that he was 18 years old. He did not show the Ganser symptom at all after this, and the mental status was completed on the fifth day, showing defective orientation, poor memory for the remote and immediate past, and defective retention, with limited grasp on education. Calculation showed mistakes and slowness with fatigue at the end of the examination. He read a short newspaper article fairly well, but elaborated slightly in subsequent rendering. His insight was partial. On admission he once said, in his rambling talk, "I'm crazy over a woman." On the fourth day said that his head was clearer, and asked to be brought back to his senses; on the fifth day said that he was not quite all right and continued, "I never can be all right again." During the first two days he soiled and wet himself with indifference. Two weeks after admission was in a peculiar dream-like state, in which he kept his eyes closed, made slow gestures with his hands, and muttered almost continuously, but slowly. He held his hands out straight before him and said, "Oh, that gold

tooth, and that dentist's chair" (unintelligible mutter); "and I met an old gray-whiskered man." When spoken to sharply he opened his eyes and said, "Yes, sir." Did you sleep last night (sleep defective)? "No, sir, I started to sleep, and I began to dream the same old dream. I confess the whole business; a man lay there with three fingers held up and a monkey nose" (closed his eyes and began to mutter again). Why do you keep your eyes closed? "I can't read that dream with my eyes open." (The telephone bell rang.) "There, do you hear that bell? There's that straight jacket again, that horse blanket." (Humming.) "'The frost is on the pumpkin, the pumpkin's on the vine.'" Spoken to sharply, he again opened his eyes, looked intently at the examiner and commenced to cry. "You're my mother, I know it, you're my mother, aren't you?" What makes you say that? "Because you've got my mother's eyes." He stated that he heard his mother when he went to sleep, and that he could hear her in spirit any time he wished. "I don't know that it's a real voice, but it is the spirit of a voice. I want to go to sleep and never wake up." The following day he again partially cleared up and was quiet, but two days after this was depressed, and said, "I am going to be chopped up to-day or shot to pieces, ain't I?" Why? "Because I'm nobody, I tell so many lies," beginning to cry. He was easily reassured though, and said, "Oh, I am so thankful." A month after admission it was noted that he was less emotional, but he said, "Thoughts keep coming into my head annoying my mind; seems as if my brother Al and poor mother was here, then that she was dead. I know I done some awful wrong, but was in awful pain when I come in here, and would have been glad to have my head cut off, but I don't think so much about it now." Vaccination and circumcision had completely healed, and he had improved physically. The following day after this note he was elated, laughing considerably, or talking and singing in a religious strain all day. When asked why he laughed, replied, "Oh, I'm so happy." A little too happy, are you not? "Yes, I'm 'most too happy in the love of Jesus." Soon after this he had double parotitis and was in bed for three days, and then depressed and confused, with his mind running again on thoughts of being killed. This condition lasted for two days, and after that his improvement was continuous. He worked

satisfactorily and well in the shoe shop, and became quite expert in shoemaking. He was rather quiet and not inclined to voluntarily converse, but was polite, willing and respectful. His insight as to his former condition was good, but memory of the attack was slightly hazy, and he was disinclined to discuss it. He was discharged recovered, and returned to the Reformatory.

Case II.—C. J. C. Admitted Aug. 27, 1907, from Sing Sing Prison; male; single; 24; nativity and parentage, Italian.

*Family History.*—Obtained from patient, who stated that he was the elder of two children, but that after his father's death his mother had married again and there were now seven other children in the family. He did not know of any insanity in the family, or the cause of his father's death.

*Personal History.*—Patient came to the United States at the age of 13 and worked about as a bootblack in New York City, in a coal cellar, etc., in the intervals going to school, but played "hookey" a great deal. For eight years prior to his crime he worked in a piano factory. He became intemperate, got into bad company, and "we broke open a store. I was only the accomplice; my friend took a plea and got ten months, but I went to trial and got one to three years." He was sentenced to Sing Sing Oct. 7, 1904, for burglary in the third degree with the sentence as stated.

*Psychosis.*—The certificate of the prison physician states that about a week before admission he began to talk incoherently of horses, laughed, shouted and kept this up almost night and day, pulled off his clothes, and they were obliged to use restraint. It was further stated that he had been "an all around bad man and punished very often."

*Physical Status.*—A fairly well built man of medium height; head large but symmetrical; stigmata of high palate with central torus; ears small in proportion to size of head, and left ear flares more than right; hæmoglobin, 90 per cent; his body was covered with old scars, most of them received in a fight in the prison. There was nothing of importance in the rest of the physical examination, except that he could not differentiate the test odors. There was a tendency to constipation.

*Mental Status.*—Restless excitement on admission with silly talk; flight of ideas; Ganser symptom; violent resistiveness with clouded sensorium; Ganser symptom only elicited on admission.

On admission the patient was restless, excited and elated, laughing often. His answers to questions were silly, as a rule, and sometimes showed the Ganser sign of "Danebenreden." When asked his name, replied, "Paul, Pigeon, Carl, Frenchy." Occupation? "Putting salt on pigeons to make them run." Age? "Since I have known you I don't know my right age." Where did you come from? "From the ocean, I am just off the boat." What

day is it? "I don't sail it." Question repeated. "Monday (Tuesday) August, 1907." Objects were called to his attention, and he was asked to name them with the following result: Pencil? Patient made a motion of writing, without answering. Question repeated. "That's a pen." What would you do with it? "Paint with it." Why do you say that? "Because that helped to make a bull dog." Knife? "Knife." Match? "To burn." Watch? "To steal." Question repeated. "Watch." What is the trouble with you? "I just fell overboard—I found a golden egg in the inn; I didn't find it, Paddy found it; I looked for Paddy, and Paddy looked for me." He made several attempts to attack the attendants on the night of admission, and was found to have a slung shot in his possession, made of a strip of sheet and a large piece of mortar. In two days he had cleared up considerably so that he was oriented and talked rationally, although still slightly elated and inclined to laugh without sufficient cause. He then revealed a persecutory trend connected with his prison life, and said, "I didn't know what I was talking about when I came in; I guess I was off my head." His memory of the remote and recent past was good; retention defective; grasp on education fair; calculation quick and correct. He explained that he did not intend to use the slung shot as a weapon, but that he thought the door had some kind of a patent arrangement, and that if he threw this over it, it would open; and that his fights with the attendants were due to his imagination that the medicine was poisoned. He improved continuously from this time, but when discharged after 41 days, on the expiration of his sentence, he was still emotional, being easily moved to tears or laughter.

Case III.—N. C. Admitted Nov. 26, 1907, from the New York State Reformatory at Elmira; male; single; nativity and parentage, Italian.

*Family History.*—Obtained from patient. He was the youngest of 12 or 14 children; all the others died in infancy but one sister who is now living and well. He knew of no insanity in the family.

*Personal History.*—Patient came to the United States when 3 or 4 years old, soon afterward going to New York City. He attended school from the age of 10 or 12 to about 16. After leaving school he gives a history of having worked in eight different places in grocery stores, factories, laundries, and once as a conductor on a street railway in Mt. Vernon, but the longest steady employment which he had was for five or six months. He admitted thieving and getting into fights as the reason for terminating

his service in most of these places. The history of his crime as given by himself is as follows:

"I came home one morning and found a girl about 8 or 10 years old in the house. I asked my sister who she was, and she said she didn't know, but that she found her wandering around alone and took her in. I said that a lot of Italians got into trouble from this, and that she had better tell the police and not keep her; so she went out, and the little girl started to run away, and I chased her back in the house and she went and hid under the bed. I didn't do nothing to her. I'm a Brotherhood of St. Andrew. They arrested me and charged me with assault and rape, and the jury disagreed. On the second trial the Children's Society said that they would teach the girl how to answer so as to give me 20 years for rape, and my lawyer and minister advised me to take a plea of assault; but I'm innocent." He was sentenced Nov. 13, 1907, for assault in the second degree (confession) with a term of five years maximum.

*Psychosis.*—The medical certificate states that about five days before admission he suddenly became excited, laughing and yelling without reason; talked loudly and incoherently; sat down and got up repeatedly; attempted suicide by hanging, and it was necessary to keep him in restraint. In the presence of the examiner he said, "Gentlemen of the jury, this man is innocent—Bring me my fancy pants! Correct! Stand up! Correct! Sit down! I am King Edward, the big gun of the whole outfit."

*Physical Status.*—A fairly well developed but undersized (5 ft. 5¼ in.) Italian boy with stigmata of retreating forehead and chin; ears small and close to head; slight Darwinian tubercle on left ear; right eye enucleated; wears artificial eye; teeth uneven; palate shows posterior central torus; good nutrition; hæmoglobin, 90 per cent; special senses acute and normal; patellar reflexes slightly increased; slight tremor of tongue and hands; sleep restless, with almost nightly libidinous dreams and emissions; gonorrhœa four years ago with subsequent attack about five months ago.

*Mental Status.*—Restless excitement; attempt at suicide; confusion; foolish talk; mood elated, laughing without cause; distractibility; absurdly wrong answers to questions.

On admission patient never answered any questions correctly, saying he was of Scotch birth; had two fathers; was 32 years old; was born in Jamaica by the City Hall; had been in Elmira three years (two weeks). He said, spontaneously, "They say I'm crazy; I ain't bug house—I didn't kill anybody; I didn't get sentenced to Elmira. I am Rockefeller; am I going home now or when am I going? I didn't kill anybody." When asked the date, replied, "I don't know—Winter time—January." He said this was the Dannemora Prison, and the examiner the president's son. Laughed without cause, and was distractible. The following day he was smiling and alert and answered questions as to his

pedigree correctly, but professes not to remember that he said anything unusual on admission, and denies that he has ever been insane. He was not exactly oriented, giving the date as October 25, 1906 (November 27, 1907). Five days after admission he admitted that he remembered having given foolish answers to questions at first, although prior to this he had continued to assert that he did not remember anything about it. He claims that he did it on the advice of a runner in the jail at Plattsburgh, where he spent the night on the way here. He affirms that this man told him that if he talked and acted foolishly he would soon get out, but he did not seem to appreciate the illogical nature of this. He was well oriented, but continued simple and defective, smiling in a foolish manner when addressed, and was unable to employ himself satisfactorily in any situation in the hospital. He continued to assert that he feigned insanity on admission, but gave no evidence of delusions or hallucinations at any time, and after 14 months was discharged recovered by return to the Reformatory. I have no doubt that if this patient had been asked to name objects, he would have exhibited the Ganser symptom more fully, as he was in a confused state very similar to the others; but unfortunately the test was not applied.

Case IV.—J. W. Admitted Jan. 21, 1908, from the New York State Reformatory at Elmira; male; single; 21; nativity and parentage, U. S.

*Family History.*—Obtained from patient. He was the oldest of four children, the others living and well. Father and mother both born in New York City; the father was a horse dealer, and died about three years ago of heart trouble. He was intemperate at times.

*Personal History.*—Obtained from patient. He was born in New York City Jan. 26, 1887; he knew of no illnesses. At the age of 9 or 10 he fell on his head from a swing and struck on a stone. There is now a depression in the frontal bone at the hair line. Began school at the age of eight or nine, attending three or four schools until the age of sixteen. He played hookey a great deal—several times a week. Began smoking cigarettes to excess at the age of thirteen; began to drink to excess at sixteen, becoming drunk three or four times a week. At this time he commenced working as a driver for a butcher, but after one year left for higher wages as an elevator boy in an apartment house for three or four months; was discharged for being late to work. He then learned bricklaying at a trade school, and worked for one year; then got into bad company, and at eighteen, with three other boys, burglarized a house of jewelry. He was caught in the house and sent to the House of Refuge for one year. He had a fight there and was sent to the Eastern New York Reformatory at

Napanoch for two years. After his release he worked at bricklaying six or seven months. He then assaulted a man by striking him on the head with a stone while drunk. He was sent to Elmira for five years maximum. He was paroled after eighteen months. He worked for eight months as a tinsmith with an uncle, but then left New York and went to Oneida with two others to burglarize a store; they could not accomplish it however, and broke into a railroad station, stealing $10.00 or $15.00 and some jewelry from baggage; were caught in Norwich, and sentenced for a term of five years maximum for burglary in the third degree (confession); one of these boys (A. J.) is now a patient here.

*Psychosis.*—The medical certificate from the Reformatory states that about nine weeks before admission the patient became violently excited. He would not sit quiet, made frequent passes at imaginary persons, made motions as of scalping his enemies, shooting them (with loud bangs), refused to work, made frequent assaults, and required to be restrained. It was also stated that he had had attacks of acute mania which subsided. He said in the presence of the examiner—"Oh, if I had a gun! I'll do life and then I'll do a day—If I could only cross swords with Major Chatfield I would run him clean through. Bring me two orders of chocolate soup."

*Physical Status.*—A fairly well developed boy, but undersized (5 ft. 5¼ in.). Forehead low and retreating; palate high and very narrow; teeth in poor condition and irregularly implanted, seven missing; general nutrition good; hæmoglobin, 95 per cent; tattoo marks of a spread eagle with the American flag on the right forearm; pupils dilated, and reaction to light and distance sluggish. Taste.—Did not distinguish salt, sweet, sour or bitter. Smell.—Did not recognize any difference between camphor, wintergreen, peppermint, cloves or lemon. Cutaneous sensibility normal for localization, heat and cold; but for pain absent. He said a pin was a "tickler," and he would push it into his flesh and say it felt good and did not hurt him at all. Patellar reflexes much diminished; fine tremor of hands and tongue; sleep defective; stated that he dreamed about horses, automobiles and airships. Constipation.

*Mental Status.*—Disoriented; elated; delusions of persecution and grandeur; restlessness; Ganser symptom lasting three days. On the way to the hospital he was elated, thought he was sailing along in an airship, and laughed a great deal without reason.

On admission the patient was disoriented as to time and place; said that he did not know his first name—that his last name was Wallace. He stared at things about him and answered almost no questions. Said that he did not know where he came from, and when asked his age, replied, "I don't know the last time I saw him." He was confused and could not tell the name of common objects, but would look at them intently without making any reply. When a pocket knife was shown him he appeared terrified

and made a lunge for it. The day after admission he was a little more talkative, and while he would not name objects would refer to their use as follows: Pencil? "What you scribble with." Match? "Wood—he make fire with." Necktie? "Put it around your neck when you want to feel good." Buttonhole? "Hold the button." Shirt? "When you go to see a Molly." Tumbler? "To feed your tickler." Sponge? "Why, if you want to wet your ear." Bottle? "Bottle." Nail brush? "Take that for me teeth." Electric light? "That's a light; when you go to sleep the light goes out." Soap? "Piece of soap." Watch? "Timepiece." Money? "Get something for me." A dime? "That's a big one." Nickel? "That's a small one." Handkerchief? "Rag." Book? "I don't know—you got me on him." A postage stamp? "That's what you put on him" (pointing to an envelope on the table). Toothpick? "Piece of wood to chew." Pencil? "Scribbler." At this time the patient was smiling and seemed to want to talk, and laughed a great deal without reason. He said that he wanted something to eat to make his "tickler feel good"; by "tickler" he said he meant something in the region of his stomach, which he referred to as "he"; said he did not care about eating, but ate to make his "tickler feel good." On the third day he said that he had lost all his airships. Asked again about his father's and mother's names, which he refused to give on admission, said "I don't want to know, that's all."

He stated that he "Would like to have a great, long sword, that would grow longer and longer, and give Major Chatfield a short one and march him about. I would like to cross swords with the major and make him walk around the institution and get all the other inmates to follow, and get them to make fun of him, and get them all crazy." This was because the major had put him in the guard house, and he would like to get square with him. The patient here laughed loudly, as if he had heard a good joke. He said that while in the guard house in the Reformatory he felt confused, and was unable to make himself do the work that was required of him. When asked about his laughing, said, "I can't help it, I must laugh, I always did laugh." He said that he "Would just as leave stay here for all time, if necessary." He thought himself a very smart boy, and a good fencer and boxer. He answered questions rather slowly, his eyes were shifting, he

rocked from side to side in his chair, and constantly picked at his sleeve or at his pockets. He thought he had been here three or four nights (two nights), but recalled the menu of recent meals correctly. Retention was very defective, and his education limited. His calculation was slow and defective, but there was no subjective difficulty; he did not appreciate discrepancies. He had no insight into his condition, saying, on the third day, that he was all right, but that he had been driven crazy in the Reformatory. Later, on the third day, when the correct names of objects were insisted upon, he would name them, and appeared much brighter. He would give incorrect answers at first as follows: Pencil? "A scribbler." What do you do with it? "You scribble with it." When the correct answer was insisted on, he replied, "Well, you can call it a pencil if you like." He gave similar replies when asked to name money and a watch. After this the Ganser symptom could not be elicited. He improved physically and began to employ himself industriously, and after a month was transferred to the working ward. He was rather quiet and seldom spoke to the other patients, and soon afterwards developed periods of sullen depression, lasting several days, when he would refuse to speak to the physician, or become tearful. Once he refused to eat for several days, and finally admitted that he thought it was because something was put into his food by the cook. He showed himself very simple minded, and associated with malcontents on the ward. At present (April 20, 1909) he is rather quiet, but sullen. He recalls his foolish answers to questions on admission. He states that he does not know why he should answer so, but that his mind was mixed up, and that he said the first thing that came into his head.

Case V.—F. G. Admitted March 3, 1908, from Auburn Prison; male; nativity, Holland; age, 28; single; painter. Anamnesis not obtained. He was sentenced for burglary in the third degree (confession) from New York City for a term of five years. His prison record is as follows:

One term, workhouse, June, 1898, for five days, for intoxication.

One term, State Prison, for three months, for disorderly conduct.

One term, Sing Sing Prison, as H. DeW., May 31, 1899, for four years and six months, grand larceny first degree.

*Psychosis.*—The medical certificate from the prison stated that about a month prior to admission he became noisy, yelling and screaming at night. In the presence of the examiner he begged to get out to work. He lay in bed naked, and would not get up. It is also stated that he was destructive.

*Physical Status.*—A fairly well developed man, but undersized (5 ft. 5¼ in.); stigmata of low forehead; receding chin; nose hooked, with deviation to the left; palate high, with posterior central torus; nutrition poor, and musculature soft and flabby; hæmoglobin, 85 per cent; mucous membranes pale; pupils normal; hearing slightly defective in left ear (a piece of pearl button was found in this ear and removed with improvement in hearing); responses to the tests for taste and smell were foolish; cutaneous sensibility normal; reflexes exaggerated; fine tremor of tongue and hands; small area of consolidation in left apex above the third rib; appetite poor; tongue coated white; bowels constipated.

*Mental Status.*—Delirium with Ganser symptom-complex; restlessness; distractibility; delusions that he was a gorilla; foolish talk; objects misnamed.

On admission he was in a restless delirium. He said, spontaneously, "I want to know what I am signing; I came here for my wife and four children; do you give them up?" When asked to show his tongue, he refused, and said, "I show no tongue; you know who I am" (observing the clock); "that clock will never tick the same hour again, you know." What date is this? "March 1, 1908." What is the day of the week? "The first day of the week." What day is that? "Damned if I know; do you?" What place is this? "This is the Women's Prison at Dannemora, built on the harem plan; it was built by my father and mother, they are two genuine gorillas." Who is this (pointing to an attendant)? "That's Johnny Cully, my deputy, I'll make him—" (vile obscenity). "I claim this place—the gag is up—the jig is up—you had better throw up the sponge." What is your name? "Henry Rinaldiny; I'm a full-blooded gorilla." Various objects were held up to him, and he was asked to name them with the following result: Pencil? "That's a thermometer." What would you do with it? "I'd stick it up my tupes; do you know what that is? I carry a dictionary in my pocket and in my tonsils." Watch? "An alarm clock." Pocketbook? "Letter." Five dollar bill? "Confederate money." Postage stamp? "Chinese stamps." Matches? "Elfelfas; elsulphurs." What would you do with one? "Light a match with it, of course." Rubber band? "Ruptures." Pen and pen holder? "That's a branch of a tree grasped by a gorilla; when you touch that you are impressed, you know." Two days after admission, after a good night's sleep, he appeared a good deal brighter and did not manifest the Ganser

symptom, and stated that he did not know what was the matter with him on admission, but the following day had relapsed into the same state. In the physical examination he said that salt was "The juice of julass." Sweet? "Juice of a gorilla." Vinegar? "Between sweet and sour." Quinine? "Taken from the heart of a gorilla." In testing his sense of smell he said that lemon was "Snarita—the juice of snails." Camphor? "Tulita—taken from my tooth." Cloves? "Taken from the skin of one of my dear children." Peppermint? "Juice of apple worms." Wintergreen? "Syrup of maple." Orange? "Gekerita, or fish juice." Asked how he slept, replied, "I sleep good, quite obstinickly." Six days after admission it was noted that he continued restless and silly in conversation. In reply to questions, said, "Oh, yes, I'm a gorilla all right; me mudder and fadder is in here, and I got a wife in here, too. I think she is over there where those icicles are" (pointing to the roof of the assembly hall). "She's run this institution for some time." He said the date was March 8 (9); that the hospital was "Elmira, or Dannemora Prison, or the bug house; everybody making funny signs and walking around and gravivating; they say they own the earth." When were you born? "Darned if I know." Where did you live? "I lived around anywheres, anywhere I would hang up my hat, 25th, 26th, or 27th Street." He recalled the menu of recent meals correctly, and said that he had been here one week (correct), and recalled perfectly the incidents on admission. He forgot the examiner's name in one minute; read a short newspaper article over very fast, and afterwards could not recall any of it, but fabricated, "They tore some bodies to pieces." Who discovered America? "I did," laughing. But, when pressed for an answer, replied correctly. What was the date? "Some years ago, a thousand years, I guess." His calculation was defective, but partly because of indifference. He was rapid in counting; "$9 \times 9 = 99$," and "$12 \times 13 = 139$," after giving several other sums correctly. When told he was wrong, said, "Well, figure it up yourself." During this examination he commented on the examiner's watch and scarf pin, and attempted to take them to look at. When reproved, he said, "You must not mind me, I'm a little childish; I want to touch things. I got a terrible pain in this hand. I had a fight with a fellow, I guess—No, it was a lion—Yes, I fought

with that lion for seven hours over in Paris—I tore his mouth open and ripped him up—You see, I fight with a clear conscience." When asked about his crime, said, "It was burglary; that's a cowardly crime, but I was hungry and needed the money." His handwriting showed tremor. He wrote his name as, "Henry Rinaldiny; prison name, F. G., No. 28,407" (correct). Up in the corner of the paper he drew a peculiar diagram, which he said was a secret emblem of his family. $\left|\frac{1}{B}\right|\frac{C}{D}$? Twenty days after admission he no longer misnamed objects, but continued restless, incoherent, and to assert that he was a full-blooded gorilla; he frequently smeared the walls of his room with feces; picked pieces out of the flooring of his room, and had an unprovoked fight with another patient. His tubercular lesion advanced rapidly, he lost in weight and developed a considerable pyrexia, his temperature never falling below 100°, and varying between this and 103°. Seven months after admission, his term of sentence having expired, he was recommitted as insane, but three weeks after this was taken home by his sister, presumably to die. Nothing has since been heard of the case.

Henneberg, in 1904,[1] claimed that the condition described by Ganser was very rare, not entitled to a distinctive classification, and goes on to observe that the symptom of "Danebenreden" may be found in normal persons when perplexed, and also when they intentionally give foolish answers to foolish questions. With this position Dr. Ruggles seems to agree, partially, at least, as the following quotation would show: "It seems fair to say that in many cases too much importance has been attached to 'Danebenreden,' and that further analysis would show that it was not a necessarily significant symptom, but a matter of suggestion, perversity, obstinacy, or carelessness. At least, for the dementia præcox patient, these conclusions probably hold good.

"It is possible that the symptom may have another meaning with hystericals, but this seems improbable when we consider the notorious perversity of these patients.

"The desire to answer incorrectly, combined with the wish to answer with the greatest possible ease, would seem to form a sufficient explanation for the larger part of the cases."

This is the conclusion of Dr. Ruggles' article, and may be

true of cases which present the Ganser symptom alone, and are not in the confusional state. I have not, however, observed the symptom or the peculiar confusion before in the four State hospitals where my experience has been gained, and do not feel justified in drawing positive conclusions as to the distinction between the symptom and the symptom-complex.

In none of these five cases was a complete anamnesis obtainable, and the history of the onset particularly was incomplete. They were all felons and ranged in age from 18 to 28. The cause of insanity was not assigned in any case, but in Case I, with a diagnosis of manic-depressive insanity, mixed type, it was, at least, partly due to a recent circumcision and vaccination; Case II, diagnosis, manic-depressive insanity, manic type, had been punished very frequently in prison; Case III, diagnosis, manic-depressive insanity, manic type, made a false claim of malingering; Case IV, diagnosis, excitement not sufficiently distinguished, had a depression in the frontal bone from a fall 11 years previously, or at the age of 9 or 10; Case V, diagnosis, excitement not sufficiently distinguished, had advanced pulmonary tuberculosis. Four of the patients had been alcoholics, but over 72 per cent of the admissions of the Dannemora State Hospital are intemperate.

The two who were discharged recovered, the one who was discharged improved, and the one remaining in the hospital improved, did not have complete amnesia for the attack, but recalled, although not clearly, their answers which manifested "Danebenreden," and the cases were otherwise typical. No satisfactory explanation of this fact has occurred to me, but they were very closely questioned regarding their memory of the confused period. In all, the symptom was of short duration and sudden cessation. The fifth case showed the typical symptom for 20 days, but continued to give silly answers, and the confused state persisted until his discharge after seven months.

All appeared to be constitutionally inferior, and two had previously served terms for felonies. Constitutional inferiority is the rule among criminals, and explains why a frank case of manic-depressive insanity among the psychoses with which they are afflicted is a rarity, the great majority having a marked and somewhat similar paranoid trend.

With perverse and silly answers to the examiner's questions, in various widely differing psychoses, we must all be familiar;

but the peculiar confusion and misnaming of objects seen in these cases and in the case reported by Dr. Frost seems to present a definite picture, and to merit the retention of the distinctive term in honor of the original observer, and to deserve the interest of further study.

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## DISCUSSION.

Dr. Frost.—These are very excellent cases reported by Dr. Townsend. They seem to be somewhat different from the single case which I reported at the Boston meeting of this Association several years ago, and to constitute a group which I do not feel qualified to discuss. My case I thought showed plainly what can be called the "Ganser symptom-complex," while these it seems to me present the "Ganser symptom" as distinguished from the symptom-complex. In the symptom-complex you have a sudden cessation of the delirium with complete amnesia for the whole illness. That was the condition my case showed. I have never come across a similar case.

As Dr. Townsend says, we are familiar with flighty answers in various conditions of excitement. Some of the samples he quoted I should consider rather typical of manic flight, and that particular kind of talk has not attracted my attention as constituting the Ganser symptom. If I find a patient who is not excited, elated, over-active, but rather in a quiet, composed state, who gives these irrelevant answers, or professes complete ignorance concerning facts which are well known—his name, residence, names of parents, etc.—there is suggested to me the existence of the Ganser symptom and I try to ascertain whether the whole symptom-complex is present.

I was particularly interested in Case 4, which seemed to me the best of Dr. Townsend's series. The topic is one of importance and whenever well-marked cases are found they should certainly be reported and published.

Dr. Townsend.—I want to state that if I did not bring the delirium out in reporting these cases it was an oversight on my part. They were all in a confused delirium. The only difference that strikes me from the case described by Dr. Frost, is that they did not have amnesia for the attack. They were all, however, in a peculiar confusion delirium at the time of admission, and those who did get over the symptom of *daneben reden* did so very suddenly.

# ACUTE ALCOHOLIC HALLUCINOSIS (ACUTE ALCOHOLIC PARANOIA).

By WILLIAM C. GARVIN, M. D.,

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The characteristic clinical features which form the symptom complex of this group of alcoholic psychoses appear, as yet, to be imperfectly understood by physicians engaged in insane work. An examination of the yearly reports of the various insane hospitals throughout the country will bear out this statement. The literature in English on the subject is very meagre. This is rather surprising, as the psychosis is a fairly common one in all insane institutions. I have thought then that a review of the German literature, together with our observations at the Manhattan State Hospital, might prove of general interest.

To Wernicke belongs the chief credit for his extensive and exhaustive studies in delirium tremens. Korsakoff performed brilliant work in isolating that particular form of mental and physical disorder which bears his name. Ziehen, Wernicke and Krapelin have contributed to our knowledge of acute alcoholic hallucinosis; but it remained, however, for Bonhoeffer of Breslau to make the most detailed and accurate study of this type of alcoholic mental disorder.

The symptom complex under discussion presents the following characteristic features:

The sudden onset in an alcoholic individual of hallucinations of hearing of a persecutory character, with anxious fear reaction or silent brooding, without loss of orientation or memory.

The disorder, as Bonhoeffer states, exhibits many features which bear a strong resemblance to delirium tremens and, for a thorough understanding of their relation, an exact knowledge of the cardinal features of this psychosis is necessary.

This observer mentions a systematized form of delirium tremens with transition to acute hallucinosis. We receive a number of such cases from the alcoholic ward at Bellevue Hospital, but as no detailed records are kept in that ward, we are unable to give

a complete history of the psychosis in its acute stage; and, therefore, we omit giving an example of such transitional forms. We, however, give below three fairly common types of the disorder under discussion.

TYPE I.—A pure auditory hallucinosis associated with intense fear. No systematization. Duration 10 days.

A woman, aged 31, bookbinder by occupation, was in the habit of drinking five to six glasses of beer and three or four glasses of whiskey a day.

One week before admission she became restless, irritable and sleepless; would start at slight noises and complained of ringing in her ears. She also heard voices say she was to be killed; thought that a murder had been committed in the house and spoke of killing herself.

On admission the patient was intensely depressed and apprehensive and reacted constantly to auditory hallucinations of a terrifying character. She heard men's voices say she would be killed; that her body would be cut up into pieces and burned, and heard the shrieks of her brother and mother outside the building as they were being murdered.

No hallucinations in other fields. No paræsthesias. Orientation and memory intact. The hallucinations subsided in three days. Insight complete.

TYPE II.—An acute auditory hallucinosis, associated with false sense perceptions in other fields. Incomplete systematization. Duration one month.

A clerk, aged 44, habitually drank four to eight whiskeys and several glasses of beer daily.

One month before admission commenced to hear vague sounds and indefinite voices which caused him worry and uneasiness. He ceased drinking and the voices left him. Three weeks later began drinking again and voices of a distinct threatening character appeared. They said he had committed a murder, stole a pocket-book, led a drunkard's life and threatened to kill him. He saw pictures and shapes on the wall, became frightened and applied to the police for protection.

On admission was intensely depressed and apprehensive. Spoke of hearing voices of both friends and enemies, coming from the walls and outside the building. The voices of his enemies would say, "Kill him. You will be poisoned. You have committed a murder and will be electrocuted. We will poison you." Friendly voices said, "We will save you. We will save your soul." He also believed the voices could read his thoughts, and spoke of a throbbing on the top of his head, which he thought was due to his enemies puncturing his skull with a needle. He complained of feeling fire on his elbows and heels and of ants crawling over his body. On account of these sensations he thought the X-ray had been used on him by the devil.

Visual hallucinations were present in the form of devils, shapes and pictures. He also thought that noxious gases, like sulphur, arose from the

ward. Orientation and memory were intact. He believed all these persecutions were inaugurated by enemies, but by whom he did not know.

After two weeks, the threatening voices disappeared. He, however, spoke of the voices repeating aloud what he had read. The paræsthesias left him after a week. At the end of a month all signs of the psychosis had disappeared. Insight was complete.

Type III.—Acute auditory hallucinosis with seeming disturbance of orientation and memory. Complete systematization. Fantastic delusions.

A laborer, aged 27, in the habit of drinking four whiskeys and seven or eight glasses of beer daily.

Two weeks before admission, he became irritable, suspicious and apprehensive; heard voices of his enemies say they were going to kill him; threw bottles out of the window in the direction of the voices; swore at them, and spoke of people watching and following him on the street.

On admission the patient was extremely suspicious, restless and apprehensive. Spoke of hearing men's voices say that they would kill him, mutilate him by cutting off his arms and legs and remove his brains and eyes. He mentioned an imaginary fight with the attendants, who wished to cut him up with a knife. At night he was very restless and apprehensive, and attempted to get out of the window in order to escape his enemies. He named two men with whom he had a quarrel one and a half years ago as being the instigators of his persecutions. They offered $50,000.00 to have him killed in order to be revenged.

He was uncertain as to the nature, character and location of the hospital and his time orientation, as well as his memory for recent events, appeared impaired. No insight.

For two weeks he continued suspicious, apprehensive and sleepless, muttered to himself, misinterpreted the movements of the attendants and several times assaulted them, thinking they were going to harm him. Would repeatedly refuse sedative, saying it was poison. Saw shadows on the wall and men being murdered in the ward; heard threatening voices coming from the bed and various portions of the walls.

At the end of the third week, the psychosis had disappeared. It was found that the seeming disturbance in his orientation and memory for recent events on admission was not real. Insight complete.

## The Auditory Hallucinations.

The essential and characteristic symptom presented by the psychosis is the auditory hallucinations. The voices may appear abruptly, with or without the preliminary phenomena mentioned below, or in a certain proportion of the cases the onset may be subacute and periods varying from a few weeks to several months may elapse before the voices become sufficiently annoying to bring about such a state of mind as to necessitate the commitment of the patient.

Frequently in the initial phase of the psychosis the patient exhibits an increased irritability to noise, slight sounds cause an apprehensive starting. Buzzing, roaring ringing or humming voices are often heard in the ears. These phenomena may continue on into the acute phase or they may disappear as soon as the voices become prominent, and then return again during convalescence.

During the active stage of the psychosis the auditory hallucinations are numerous. They are uniformly of a threatening character and engross the attention of the patient to the exclusion of all other interests. The following were the most frequent hallucinations observed in sixty cases:

The patient heard that he would be killed and cut to pieces; dismembered in various ways, burned alive, shot, poisoned, that his family have been tortured and murdered. Heard himself cursed, called a thief, murderer, bum, drunkard, no good; that wife or husband was unfaithful. Wherever he went, people said there he is, catch him—there he goes, or the voices of a gang continually threatened and followed him. Accusations of immorality and infidelity were noticed more frequently in the women than in men. Religious hallucinations, when present, are usually of a condemnatory nature. The voices said that the patient would be damned, sent to hell and his soul would be lost, etc. Grandiose hallucinations on which the patient builds expansive ideas are uncommon—we have seen only one such case.

The voices come from all directions. When asked where they come from, the patient usually points to definite locations, i. e., from the walls, floor, bed, telephone, ventilator, upstairs, below or outside the building. Now and then they speak of them coming by wireless or by auto-telephone. The voices are generally loud and distinct, and are uniformly those of his enemies, but occasionally the voices of friends giving him friendly warnings. The voices have a definite sound and character. They are those of men, women or children. Bonhoeffer states that sometimes voices in a peculiar unknown tongue are heard. A very characteristic feature is the hearing of a babel of voices, each voice apparently trying to drown out the other so that the individual voices cannot be made out. This author also mentions the frequent occurrence of voices which speak with a measured rhythm. Illberg and Wernicke report cases in which the patients hallucinated in

metrical form synchronous with the beat of the pulse. Mention is also made by authors of cases in which the patient hallucinated rhythmically to the tick of the watch or clock. These phenomena were not observed in our cases.

The voices are generally heard in both ears with varying degrees of distinctness. We have, however, seen several cases in which a change in the position of the patient influenced the intensity of the hallucinations; for example, when the patient lay on his right ear the voices were heard more distinctly on that side and seemed to come from the pillow. The patient usually hears single words or short sentences. Not infrequently he hears voices engaged in conversation about himself (Kräpelin). These are uniformly of a threatening or slanderous character. We have observed patients listening attentively to the conversation and answering the voices in angry profane manner.

An attitude of attention in many patients favors the appearance of voices. We have been able in a few cases by distracting the attention of the patient by rapid conversation and humorous remarks to cause a temporary cessation of the hallucinations. During the conversation the patient would laugh, smile and for the moment lose his fear affect.

Alternating voices are sometimes heard. One of our patients heard the voice of the devil say he would be killed and damned. The devil's voice would cease and he then heard the voice of an angel say he would be saved. Another patient spoke of hearing a man's and woman's voice alternately calling him all sorts of vile names.

### Hallucinations of Sight.

These are present in a considerable number of cases, but play a subordinate rôle. The closer the relationship to delirium tremens, the greater the prominence of the visual hallucinations. Among the most frequent visual phenomena observed were pictures, shapes, statues, faces, heads of people, flashes of light and indefinite objects moving around the room.

### Paræsthesias.

These are quite common. The patient feels an itching, burning, tingling or numbness in various portions of the body. They often

speak of these phenomena as electricity and say it is caused by their enemies.

### Hallucinations of Taste and Smell.

These are not very common. Occasionally the patients will complain of odors like sulphur or some foul gas in the room, or of some odd taste in their mouths, which they often say is the result of some poisonous medicine they have been given.

Another frequent hallucination is that the patient believes his thoughts are repeated aloud but in the repetition they are distorted. We have had a patient who complained that the voices repeated what he had read or conversations with the physician. Another patient stated that the voices would ask him questions and if he did not reply, they would answer for him.

Imperative hallucinations are mentioned by Bonhoeffer. As a result of these, various motor manifestations are seen. We have seen two such cases.

Ideas regarding the viscera are rather infrequent. Ideas of reference and an anxious misinterpretation of ordinary occurrences are common. The patient sees a policeman or a crowd of people on a corner waiting for a street car and imagines they are looking at him. The nurses who casually glance in his direction are plotting to kill him. He refuses medicine and food because the nurse happened to make a chance remark or what he considered a peculiar gesture. He resists taking a bath for fear he will be drowned and starts suddenly in fright at any sudden movement in his direction, etc.

### The Tendency to Systematize the Hallucinations.

Another characteristic of the psychosis is the tendency of the patient to bring his hallucinations into a connected delusional system. Physical explanations of the origin of the voices are common. They come from the telephone, hot air register, through the window from people outside the building or from people whose footsteps he hears and so on. Ideas of infidelity are developed from chance remark of the husband or wife. These are more common in women than in men. The person with whom the patient has had a recent quarrel is regarded as the one who is at the bottom of his persecution. More rarely he will refer back his

persecutions to such a remote period, prior to the onset of the hallucinations, that the physician will be in doubt whether or not he is dealing with a more or less fixed delusional state. We have had patients who named persons with whom they have had friction as remote as two to four years prior to the psychosis as being the instigator of their persecutions. The systematization, however, in the greater number of cases is superficial and changes constantly with the character of the hallucinations.

Ideas of wealth and grandeur are not common. In the one case in which they were present, they developed from the hallucinations, but were unimportant features of the psychosis.

### The Characteristic Affect of Fear.

The behavior of the patient in his reaction to the hallucinations, is, next to auditory hallucinations, the most important feature of the psychosis. He is in continual fear. This is most pronounced during the acute stage of the psychosis. In the lighter cases, in which the hallucinations are not fully developed, there may be nothing more than an uneasy anxious dread. The patient, in the most severe cases, lives a life of torture. He becomes restless, irritable, uneasy and frequently moves about or even goes so far as to change his residence in order to get rid of the threatening voices. Quite a number go to the church for assistance or to the police for protection. In this irritable state, they are frequently assaulting or homicidal. Some attempt to end their troubles by suicide.

The fear affect is deep grounded and the patient cannot, as in delirium tremens, be persuaded out of his fears (Bonhoeffer). In many cases the fear reaction is manifested by an anxious hunted expression, or else they appear depressed, sit brooding over their troubles and are very irritable and uncommunicative. One of our cases presented a strongly stuporous aspect, seemed self-absorbed, spoke only after being urged and later committed suicide. Kräpelin mentions a mixed affect of half fear and euphoria. Bonhoeffer found this reaction in the transitory forms between delirium tremens and acute hallucinosis.

In many cases the fear subsides to a great degree upon their entrance into the hospital, although the hallucinations continue. They say they feel safer in the hospital for their enemies cannot reach them there.

### Stream of Thought, Orientation and Memory.

The patients' stream of thought shows no alteration. Their orientation and memory remain intact. We have found that those cases in which the orientation and memory for recent events appear impaired, exhibit more or less delirious features. There is not, however, a real loss of grasp on his surroundings and time relations, as we found later in the course of the psychosis that the patients possessed a surprisingly accurate knowledge of all that transpired during the period in which an apparent disturbance seemed evident. The closer the relationship to delirium tremens the more disturbed is the memory and orientation. Sleep is always disturbed during the acute stage as the hallucinations are usually more vivid at night.

### Physical Signs.

The physical signs which accompany the psychosis are unimportant. Tremors of the hands and tongue, gastric disorders and frequently slight neuritic symptoms are present. Bonhoeffer states that an acute hallucinosis with polyneuritis and amnesia is occasionally seen. Vaso-motor disturbances, as sweating and cardiac palpitation are sometimes present. Albumin, as a rule, is not found in the urine.

### Progress Toward Recovery.

The return of the mental symptoms to normal conditions takes a longer time than for the development. First of all there is a disappearance of the fear affect. Parallel with this the hallucinations becomes less prominent. Residuals in the form of voices, ringing, buzzing or humming in the ears or a roaring in the head often persist for weeks.

During convalescence, reappearance of the voices is very common, and when this occurs there is a return of the affect of fear, either open or, as is often the case, in the form of silent brooding.

The sudden appearance of insight is one of the remarkable features of the psychosis. The patients have an excellent memory for occurrences during the acute phase of the disorder. An extended investigation of the patients' mental states during this period will frequently yield remarkable results. The wealth of

their hallucinations and delusions as well as the fantastic character of their experiences are astonishing. They are much more numerous and varied than one would suppose from mere observation of the patient.

## Duration.

The duration of the psychosis varies between a few days and several weeks. A considerable number of our cases, however, have been prolonged for months. Cases are reported which have run for over a year with finally complete recovery. Relapses are common and frequently occur after days and weeks during which the patient is free from hallucinations. Residuals in the form of humming, buzzing or roaring noises in the ears or head are common and cause considerable annoyance to the patient.

The sullen, depressed, irritable and uncommunicative cases appear to run a longer course than the frank accessible ones. Their conduct is frequently marked by sudden outbursts of temper and violence with profane and abusive language. Sudden assaults on fellow patients on account of chance remarks or in response to their hallucinations are very common. These patients often deny hallucinations, yet judging from their conduct, it is evident that they are still under their control.

Apart from this group, a number of cases, after the disappearance of the hallucinations, exhibit an irritable and unstable mood. They are very persistent in their demands for release and show marked resentment against the physician on account of their detention.

Bonhoeffer states that the duration of the psychosis depends upon the closeness of its relation to the delirium tremens, that is, the greater the tendency to disorientation and combined hallucinations, the shorter is the course of the psychosis.

## Prognosis.

All writers give a favorable prognosis for the first attack. A patient, however, who has suffered from an attack of acute hallucinosis is especially prone to have further attacks of alcoholic insanity if his excesses are renewed. The second attack is almost certain to be in the nature of an acute hallucinosis if over indulgence follows soon after his discharge from the hospital. These

patients are especially vulnerable to the effects of alcohol; very small quantities are sufficient to cause another upset. Other contributory factors in these cases are worry over inability to obtain employment, family quarrels, lack of proper food, accidents, the infectious diseases, etc.

In our list of sixty cases we have had nine who developed a second attack, and one who is now in the hospital under treatment for his fourth attack.

The prognosis, as regards the life of the patient, depends upon the time the patient is placed under close surveillance or brought to the hospital. The tendency to suicide is very great, but the danger, however, does not end with their commitment. These patients form one of the largest groups of acute psychoses with suicidal tendencies, and give hospital physicians much concern as regards their safety. Repeated attempts at suicide are not infrequent, and in our cases occurred more frequently in women than in men.

A striking illustration of the tendency of these patients to end their troubles by suicide is shown by the fact that among the sixty cases we examined (twenty-four women and thirty-six men) six men and seven women attempted to take their lives by various means.

Death from intercurrent diseases is not nearly so common as in delirium tremens.

## Etiology.

Prolonged alcoholic excesses produce the psychosis usually in conjunction with recent over-indulgences. All the patients personally examined by the writer were both beer and whiskey drinkers. In a few especially susceptible individuals, however, smaller quantities may cause a mental upset. The disease attacks a better class of individuals than those who suffer with delirium tremens. The largest number of our cases in men were among trade workers and in women among those who were married. The preferred age is the third decade of life. Cases are uncommon in the early twenties and over forty-five. Of our sixty cases, 32 were of Irish birth, 14 born in the United States, and the balance divided among seven European States. The Jewish race is conspicuous by its absence. Other contributory factors are often

present, especially in unstable individuals, fright, shock, quarrels, over-work, accidents, diseases, like pneumonia, influenza, or tuberculosis.

## Diagnosis.

A searching anamnesis from the patient and his friends or relatives is of the greatest importance. Definite information should be obtained as to the exact quantity, frequency and form of alcohol imbibed. This is of the utmost importance in enabling us to differentiate hallucinoses of non-alcoholic genesis from alcoholic disorders, and also aids us in forming an opinion in those cases in which alcoholic features temporarily mask or play a part in bringing into prominence other mental conditions, for example, paranoid dementias.

The patient and relatives should be carefully questioned with reference to previous acute hallucinatory episodes with fear reactions. The former attack may have only been in the nature of a slight uneasy apprehensiveness without hallucinations, or the latter may have been incompletely developed. Patients often continue at their vocations during the lighter attacks and forget to mention them unless closely questioned.

Exact information regarding the patient's make-up is another important feature of the anamnesis. Dr. August Hoch, in his study of manic-depressive insanity and dementia præcox, has shown us the value of such knowledge. It is of especial value in cases which present features which awaken a suspicion that we are dealing with something more than an acute alcoholic hallucinosis.

The diagnosis of acute alcoholic hallucinosis in most cases offers no difficulty. The history of prolonged alcoholic excesses; the sudden appearance of hallucinations of hearing of a threatening, annoying character associated with fear, apprehension or silent brooding; the rapid development of ideas of persecution and harm, together with the preservation of orientation and memory, form a symptom complex that is not easily mistaken.

In delirium tremens, hallucinations are chiefly in the optic and tactile fields; there is disorientation, disturbance of memory for detail and for time succession of occurrences, florid confabulations and disturbance of perception. Moreover, the course is short, usually one week.

Acute hallucinoses of non-toxic origin are occasionally seen which present the same clinical features as acute hallucinoses of alcoholic genesis. We have under observation a number of such cases in which fright, shock, worry, privation and fears of being robbed, etc., appeared to have been the etiological factors. Alcohol could be definitely excluded.

The diagnosis of acute alcoholic hallucinosis from the paranoid form of dementia præcox occasionally offers difficulties, especially if the patient has recently over-indulged in alcohol; here, the alcohol may have been a large factor in bringing into prominence the fundamental disorder, or alcoholic features may dominate the picture to such an extent that the diagnosis for the time being may be in doubt. Bonhoeffer states that when intestinal hypochondriacal complaints or taste paræsthesias are present and form a prominent feature of the psychosis, we may be sure that we are dealing with something more than an acute hallucinosis. Kräpelin regards the hearing by the patient of voices engaged in conversation about himself, to which he is an attentive listener, as of diagnostic value in acute hallucinosis. In doubtful cases all the facts should be present before proceeding to a definite diagnosis. We will then have little difficulty if the cardinal features of the psychosis under discussion are borne in mind.

Toxic psychoses resulting from the over-use of morphine, chloral, cocaine, trional, veronal and other hypnotics, are frequently accompanied by hallucinatory states with fear and apprehension. Many of these patients are heavy drinkers and thus alcoholic features may complicate the situation. These cases should be grouped according to which toxic features dominate the picture. In the drug psychoses we have a delirium with clouded sensorium. Hallucinations of sight, as well as those of hearing, are prominent; the latter being usually of a dream-like character. Tactile hallucinations are common, especially in cocaine delirium. There is great fluctuation in the mood, the fear being scarcely ever continuous. In addition there is disorientation, confusion, rambling or frequently incoherent utterances. On recovery there is usually amnesia for the acute phase of the disorder.

With reference to progressive mental disorders developing after acute alcoholic hallucinosis, there seems to be a difference of opinion. We have had a number of cases in which the symptom

complex at the initial examination appeared sufficiently characteristic to warrant the diagnosis of acute alcoholic hallucinosis, but the subsequent course of the psychosis made it plain that we were dealing with a more chronic form of insanity. We are collecting a number of such cases for future consideration.

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## DISCUSSION.

Dr. Mitchell.—At the Danvers Insane Hospital, for a period of several years, an attempt was made to classify the various alcoholic psychoses along the lines indicated by Bonhoeffer, and we found many typical cases of alcoholic hallucinosis and also many types which showed the nearly related condition of delirium tremens to acute alcoholic hallucinosis. We also found many cases which did not show prompt recovery and which eventually became deluded and permanently insane, so that a subdivision of acute alcoholic hallucinosis had to be made along somewhat arbitrary lines.

One of the most interesting problems in psychiatry is the relation which alcoholic indulgence bears to paranoid delusional states; that is, to what extent are these psychoses the result of alcohol or modified by alcoholic indulgence?

Mention has been made of the frequent suicidal reaction to the terrifying hallucinosis. In our experience, we found that homicidal attempts were common as a reaction to the threatening auditory hallucinations. This psychosis is of extreme medico-legal importance, because many patients, while acutely hallucinated, may make frenzied attempts at homicide as the result of their psychosis, and within a few days have so far recovered their normal mental condition that no defect is appreciated unless careful investigation of the patient's history and all attendant circumstances is made by people familiar with the peculiar mental disturbance of this character.

Dr. Stanley.—Permit me to express my appreciation of the doctor's full description of a very interesting psychosis.

Kraepelin, in his later writings, has made two divisions of what was formerly described as alcoholic delusional insanity; viz., acute alcoholic hallucinosis and alcoholic hallucinatory dementia. I am a little surprised that the reader has not called attention to this latter division, as, to my mind, some of the symptoms he has enumerated apply only to this psychosis. As both acute alcoholic hallucinosis and alcoholic hallucinatory dementia arise from the same cause, they naturally have some symptoms in common,

for instance, hallucinations of hearing with delusions of persecution based thereon. Acute alcoholic hallucinosis, however, as I understand it, is a recoverable disease and of brief duration, while alcoholic hallucinatory dementia, from underlying conditions (possibly *hereditary* in some instances), is essentially chronic. The symptoms of both vary somewhat with the degree of chronic alcoholism present.

Dr. Garvin.—I think I made it plain that the prognosis in the psychosis under discussion is always favorable, especially in the first attack. In reviewing the cases which came into the hospital for their second attack we failed to find any signs of deterioration. Various authors differ in their views as to whether a progressive psychosis follows an acute hallucinosis. Bonhoeffer believes that in many of the cases cited by Wernicke fundamental disorders had already existed. We are at present collecting a number of cases which came into the hospital with what resembled in many respects an acute alcoholic hallucinosis, but subsequently abnormal emotional states and peculiar ideas developed entirely at variance with our conception of what constitutes even a chronic alcoholic psychosis. It is our opinion that in these cases alcohol doubtless brought into prominence ideas that had been more or less submerged. A further study of the patient's make-up and investigation of the workings of his internal mental life is very essential.

If we bear in mind the distinctive features of the psychosis under consideration we shall have no difficulty in placing the vast majority of the alcoholic hallucinatory states in their proper place.

# THE MIXED FORMS OF MANIC-DEPRESSIVE INSANITY.

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The interesting group of mental disorders described by Kraepelin and his pupil Weygandt as "mixed types" of manic-depressive insanity, seem, so far as one can judge from the current literature and hospital reports, to have received little notice from alienists in this country. With the single exception of a brief article by August Hoch, no description of the mixed forms of manic-depressive insanity, with report of cases, has yet appeared in English. Recently a wider interest in this subject has been aroused because the Kraepelinian school now proposes to expand the conception of the mixed forms so as to embrace clinical pictures hitherto kept apart from the manic-depressive group. I refer especially to the work of Dreyfus, who, after reviewing Kraepelin's own cases of involution melancholia, concludes that the involution depression is a *mixed* form of manic-depressive insanity, and this view is supported by Kraepelin, who writes an introduction to the Dreyfus study.

Kraepelin performed a great service for psychiatry by showing the importance of making a closer study of the symptomatological picture and demonstrating the value of certain symptoms as prognostic guides. The desire to discover diagnostic signs and to circumscribe "disease entities" led, however, too far in the direction of grouping psychoses in a schematic way with over-estimation of the statistical method as a nosological principle. This resulted in a serious neglect of the factors at work in the genesis of mental disorders. In this respect, Dreyfus seems to have reached an extraordinary position, and by emphasizing certain minor features in the symptom-complex of involution melancholia and finding that recovery from the depressions usually took place, he has used a method of analysis that will allow practically any

functional or non-deteriorating psychosis to be included in the already extremely broad group of manic-depressive insanity.

It would seem, therefore, appropriate to give at this time a brief review of Kraepelin's conception of the mixed forms of manic-depressive insanity, to bring to a test its usefulness in actual practice and to see if, as claimed by Kraepelin, such a view-point permits us to arrive at a proper interpretation and a correct prognosis of certain obscure clinical pictures, the symptoms of which do not, for a time at least, correspond with either of the two common phrases of manic-depressive insanity.

As is well known, Kraepelin adduced a relatively simple formula to cover the essential features of the manic-depressive complex. The three cardinal symptoms of the manic attack were contrasted to the three characteristic symptoms of the depressive attack in the following manner:

*Manic Phase.*—Emotional exaltation, psychomotor restlessness, flight of ideas.

*Depressed Phase.*—Emotional depression, psychomotor inhibition, retardation in thought.

It was not claimed that these three symptom-pairs were essentially opposites, either in nature or origin, but were rather to be viewed as related phenomena of a fundamental disorder.[1] Kraepelin, in his exposition of the mixed forms of manic-depressive insanity, assumed that certain elements of the depressive phase could replace or combine with certain of the elements of the manic phase, or *vice versa,* that manic symptoms could appear in the course of a depression. In other words, it was thought that attacks occurred in which both manic and depressive symptoms appeared simultaneously.

That such symptom-complexes as described by Kraepelin do actually occur is easily demonstrated if one follows carefully the symptoms presented throughout the course of the usual excitements or depressions; in a considerable number of cases one is struck not only by the lack of uniformity in the picture as a whole

[1] In discussing the psychomotor symptoms of the manic-depressive attacks on page 516 of his text-book, Kraepelin expressly says: "The inhibition and over-activity must therefore be regarded as closely related phenomena of a fundamental disorder."

and the variability of individual symptoms during the course of the attack, but also by the appearance, if only for brief periods, of clinical pictures which harmonize neither with the manic excitement or the typical depression. One sees often enough emotional fluctuations in the ordinary excitement or depression without a corresponding change in the psychomotor symptoms. Less frequently a change may be observed in the motor reactions without any alteration in the emotional tone. A manic patient may remain elated, while the busy activity is replaced by psychomotor inhibition. In depressive attacks a quiet, retarded patient may become suddenly loquacious and distractible, remaining at the same time inhibited in activity and depressed in mood.

In circular and alternating cases it is by no means uncommon to observe a gradual transition from one phase to the other, and to note that the change in the different symptoms is not always accomplished in the same space of time. For instance, in the transition from excitement to depression, the first change may be noticed in the lessened motor activity. A manic patient may become sluggish and prefer to remain in bed, yet for a few days continue to show elevation of spirits and flighty talk, which later disappear as the oncoming depression is fully established. Finally there are undoubtedly patients in whom the entire attack is made up of just such features as appear transitorily in the course of an otherwise typical excitement or depression.

These mixed conditions demonstrate that a very close association exists between the various components entering into the excitements and depressions, and one observes a peculiar intermingling of symptoms which appear at first sight almost antithetical. Thus one finds that a patient may show flight of ideas, while at the same time considerable slowness and difficulty in thinking is present, or a patient may be restless, yet at the same time retarded in action; still other patients exhibit in their mood a strikingly odd mixture of depression and cheerfulness.

The occurrence of these mixed states was used by Kraepelin as additional evidence that the mania and melancholia of the older authors were merely different phases of the one disorder, viz, manic-depressive insanity.

From a purely schematic viewpoint a great variety of combinations are possible between the three fundamental symptoms of the

manic syndrome and the three fundamental symptoms of the depressive syndrome. Kraepelin thinks that at least six mixed types may be recognized as distinct clinical forms.[2]

For purposes of description one may group the mixed forms of manic-depressive insanity under two main divisions:

1. States of emotional depression with manic symptoms.
2. States of emotional elevation with depressive symptoms.

By far the larger number of cases fall into the first division, namely, the depressions with manic symptoms. These may be separated into two clinical groups: *the agitated depressions* and the *quiet depressions with flight of ideas.*

*The Agitated Depressions.*—The patients grouped here show a depressed mood associated with restlessness and agitation, while at the same time a thinking disorder is manifested by distractibility and flight of ideas, or there may be definite signs of slowness in thinking, with restriction in the range of thought, and the patient is then monotonous and limited in expression. In order to illustrate this symptom-complex I shall at once quote briefly from a few case histories:

A woman of 51 was observed in her second attack. At first she presented the symptoms of a quiet, retarded depression. She had a dull,

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[2] I append in tabular form the six mixed types described by Kraepelin. They are the following:

1. Agitated depression: depression, motor excitement, flight of ideas.
2. Depressive excitement: depression, motor excitement, thought inhibition.
3. Unproductive mania: exhilaration, motor excitement, thought inhibition.
4. Manic stupor: exhilaration, motor retardation, thought inhibition.
5. Depression with flight: depression, motor retardation, flight of ideas.
6. Mania with retardation: exhilaration, motor retardation, flight of ideas.

I have not found it possible to make any satisfactory clinical distinction between the first two types, and include both under the "agitated depression," which may show either flighty tendencies or signs of thought difficulty, but very often both flight and thought difficulty occur at the same time. The last-mentioned type, "mania with retardation," is a rare combination, as far as any objective signs of slowness of motion are concerned, although one sees often enough manic patients who show remarkably little restlessness.

immobile face, was slow in speech and action, retarded in thinking, and without spontaneity, the clinical picture corresponding to the typical manic-depressive depression. Within a few days the condition changed. The signs of psychomotor inhibition disappeared, the patient became freer in speech and action, and finally restless and agitated; she then talked continually, was very distractible, and her stream of utterance showed a distinct flight of ideas with occasional sound associations. The following stenographic samples of her productions will illustrate these points:

"It's all over, there is nothing more to be said now—no she won't know what to say because it's all been said (refers to questions asked another patient). I don't know if there are any more wily stenographers or anything at all (refers to stenographer's writing)—everything is stopped—that's right, you won't be able to understand a thing after a few minutes (refers to physician taking out his watch)—I don't know what to do—don't know how to give orders—I don't know what to say—what can I do—what shall I say? I am powerless to do or say . . . . what's your writing doing? You are writing 22 all the time (sees the date written) —no writing will do any good . . . . Oh, Lady Wright, you will meet your rights, too (another patient named Wright) . . . . things are getting worse and worse, was it your wife I saw yesterday, doctor?—I don't believe he knows whether he is married or not—excuse me, doctor, do you think this will ever be righted? . . . ."

Combined with this productivity of speech, there was still a great difficulty in thinking. The patient described her mental state in the following words: "I am confused—I am all stunned—I am paralyzed." Her mood was anxious, she talked of her sins, expected the world to be destroyed, and expressed fantastic and nihilistic ideas. It was very striking that in the midst of this intense depression the patient sometimes smiled, and she herself commented on this, saying: "I have to laugh even though I am so upset."

In this case there seemed to be a mixture of both manic and depressive symptoms, the depressed mood and difficulty in thinking appearing with motor restlessness, great distractibility and a well-marked flight of ideas. The case exemplifies the mixed form of manic-depressive insanity known as the "agitated depression." The resemblance to involution melancholia was entirely superficial.

A very interesting agitated depression was presented by a woman of 32. She had two previous circular attacks, with recovery, which left no doubt as to the diagnosis of manic-depressive insanity. In the third attack the following condition was observed:

The patient, in an anxious, worried mood, showed great concern about her health, believed that she had some blood disease, and feared that she

would never get better. There was an intense feeling of physical insufficiency. She complained that her limbs felt tired and "powerless," and she talked of the muscles being "stiff" and "paralyzed." Notwithstanding this marked feeling of motor inadequacy, the patient was extremely restless. She moved about with quick steps, rubbed her hands, picked the skin off her face, complained that she could not keep her hands still, and was unable to sit quietly. While in this depressed, restless state she was very talkative, harped on her physical complaints, implored help, sought reassurance that she would recover. If allowed to, she would talk on unendingly, repeating herself a great deal, dwelling on the same topic, even at times reiterating set phrases, showing a distinct narrowness of thought. No flight of ideas or distractibility was observed. She did not admit any feeling of mental difficulty, but always emphasized the fact that the trouble was "weakness in the body." It was not uncommon for the patient to smile when tearful and talking of her unhappy state.

This case showed then an agitated depression with psychomotor restlessness and garrulousness, but at the same time a decidedly restricted range of thought. The point of particular interest was the peculiar combination of a feeling of physical insufficiency with marked psychomotor restlessness.

In the agitated mixed forms one sometimes sees very curious contrasts in mood, which apparently depend on the extremely labile emotional state. As an example, I might cite the case of a woman of 59, admitted in her fourth attack. She was depressed, tearful, clasped her hands, talked of her wickedness and said she was deserted by God. Yet the patient intermingled these despondent and self-condemnatory statements with smiles and jocose allusions and she could be easily influenced to laugh if the physician made cheering remarks. Occasionally she showed some distractibility and a few flighty elaborations were uttered. Later the anxiety and ideas of unworthiness disappeared, but the mild elation and humorous mood persisted for some time. This case illustrates what a peculiar mixture of mood may occur. The general picture was that of an agitated depression, but some manic traits could nearly always be demonstrated.

The mood in these agitated depressions is usually one of anxiety, though in some instances the patients appear more bewildered and perplexed than fearful. One does not find the sadness and quiet despondency as in the typical retarded depression, but instead there are uneasiness, puzzling, anxious anticipations and fears of impending harm. With great frequency one observes fluctuation

in the emotional state when the patients smile or show a transitory cheerfulness.

The restlessness seems to stand in close relation to the anxious state of mind, and very often a patient through restlessness may be slow, constrained and limited in the range of activity.

The thought disorder is exhibited in the wandering of attention, the tendency to comment or the flight of ideas. On the other hand, there may be definite signs of thought difficulty with complaints of mental dulness and slowness in thinking.

*Quiet Depressions with Flight.*—This second group of *depressions with manic symptoms* is made up of patients who are depressed in mood and reduced in spontaneous activity, yet at the same time their utterances show distractibility of attention and flight of thought. The mood in these cases shows none of the anxiousness of the agitated depression just described. These patients are sad, despondent and hopeless about the future. They express self-accusations and feelings of remorse, often attempt suicide or inflict self-injury. Some of the cases included here show a marked degree of perplexity, the patients puzzle and ponder over the simplest things seen or heard and are intensely distractible.

The psychomotor inhibition is usually shown in the slowness of motion, but there may be merely a lack of initiative, with a tendency to remain in one place. The patients may talk much or little, but their productions show at once that they do not remain with the topic, but instead drift into flighty elaborations, with sound association, and they are easily distracted by incidental occurrences. Although showing well-marked distractibility and flight, the patients may speak slowly and complain that they are mentally dull, without brains, have no sense, etc. This very interesting combination of flight of ideas with thought difficulty is especially well shown in this mixed form. Brief reference to a few cases will illustrate this clinical type:

A patient, 51 years of age, had passed through seven previous attacks of either excitement or depression, but in the eighth attack she showed the following symptoms:

She remained calmly in bed and did not move much; she felt downhearted and had a dull, dejected facial expression. She talked slowly and wearily, yet kept up a fairly steady stream of utterance, and one readily

observed that she was distractible, drifted from one topic to another, and showed, in fact, a mild flight of ideas. No difficulty in thought was demonstrated objectively, but she complained of a dull, heavy feeling and loss of ambition.

To a question as to how she felt, the patient replied:

"Kind of sad and dull—I see all that you put down there . . . . I know everything—it is good to write them things, isn't it?—everything in such a hurry (physician writing rapidly)—it's too bad to come here—that's why I should have put all those places out of my head, for if I had I would never have to return telephones again (overheard telephone again) . . . . they sound the heart with that, don't they? (physician's stethoscope) —my heart is strong, isn't it?—there is the boat again with some more unfortunates (hears boat whistle on the river)—every word you say they seem to write down."

The combination of symptoms in this case was that of a depressed mood with reduction in activity, yet at the same time the patient was talkative, distractible and showed a flight of ideas.

A young woman of 21 was seen in her first attack. She was depressed, expected punishment for wrong-doing, was despondent and self-depreciatory. She was dull in appearance and retarded in movement. She answered questions slowly and complained that she could not think clearly; she was imperfectly oriented. It was found that in answering questions she talked on and on, elaborated extensively, showed distractibility and definite flight of ideas with sound association. Because of her slowness in utterance and the long pauses, the flight of thought might have been easily overlooked.

The following specimen of her talk shows the shifting of topics and the divertibility, and also contains an instance of word-sound association:

"I never was bright—I tried to learn but I never could—I guess everybody in the world is brighter than me . . . . I wish I know how to typewrite (notices typewriter)—I never could learn it though—I always thought I knew how to *draw,* but I never did, I guess—all this *Thaw* case they tell and read about, and I never liked to read it . . . ."

The patient expressed some peculiar ideas, e. g., claimed that she was in doubt as to who her parents were, and at home she had maintained that her stepmother's baby was the servant girl's baby. Later there was a period of mutism. The case was first presented at staff meeting as one of dementia præcox. The features of a mixed manic-depressive condition were, however, recognized, and a good prognosis accordingly given.

The patient recovered and later had an exhilarated excitement, showing a typical hypomanic state, which still further confirmed the diagnosis of manic-depressive insanity. The patient showed

in the first attack a mixed state in that she was depressed, retarded in thought and action, but at the same time she exhibited distractibility and flight of ideas.

A woman 25 years old was observed in a first attack. The patient was depressed and self-reproachful, called herself a "human devil." She refused food and wished to die. She was very inactive, remained in bed, kept her head covered, and for long periods of time was not seen to move. Sometimes she was mute and resistive, again she talked with freedom, was often loquacious, the stream of thought covered a wide range of topics, showed a flight of ideas, with many sound associations. A sample of her spontaneous talk will illustrate:

"Mother, dear, Lillie is a devil—Frank *Brothers,* a shoe store on 6th Avenue—golden peacock—Lillie *Alston* is going to *Boston* this summer —Boston—Boston *burglar* . . . . I saw the Labor Day parade—all the bakers—all the butchers—all the merchants—and the sun shone out in all its glory—but there is no more sun because I am a damn devil—Chicago, the Windy City—Milwaukee with all its bells ringing—Battle Creek, Michigan—Milwaukee, Wisconsin—Niagara Falls—now I remember McKinley was shot at that place—yes, all the Russians and Jews—the Czar of Russia and the Czarina—St. Petersburg, Rome—I'll write to the Pope and see why I'm not burned alive."

Some fluctuations in her mood were noted—there were occasional outbursts of anger—again she smiled, made some witty remark or related a joke, but in a moment relapsed into her doleful, depressed trend.

Later the picture changed; the inactivity and depression disappeared, and a typical manic state developed with great exhilaration, over-activity and flight of ideas.

In this patient during the early phase a mixture of symptoms was evidenced in the depression and absence of spontaneous activity combined with a flight of ideas. While in this mixed state this case was also considered by some of the physicians on the staff to be one of dementia præcox. This was probably due to the periods of mutism, refusal of food, the resistiveness and the peculiar habit of keeping her head covered. The presence, however, of a definite flight of ideas and the fluctuations in the mood were recognized as the most important prognostic signs.

In some of these states of depression the manic features may be very slightly developed and other symptoms be present which give a catatonic coloring to the case.

A young man of 20 was admitted to the hospital in a dull, inactive state. He resisted the nurses, refused to speak, showed catalepsy in the arms. In a few days, however, he began to show distractibility, and though

he did not speak much he mumbled a good deal. During some of the interviews he drifted from one topic to another and commented on what he chanced to see or hear. His facial expression portrayed perplexity and he complained of being "mixed up." Often he did not answer questions, or merely muttered something which could not be understood. The case was at first thought to be one of dementia præcox. This diagnosis was based probably not only on his peculiar behavior in the hospital, but also on the fact that at home he had expressed some strange notion about his own identity. On further consideration of the case, however, the mixed features were recognized, the essential symptoms being a depression with slowness of motion, difficulty in thinking, and lack of clearness, while at the same time there was evidence of distractibility and a failure to keep to the topic. The peculiar behavior shown was not incompatible with his inability to grasp the situation and his perplexed state of mind. The depression was succeeded by a typical manic excitement and recovery. When convalescent, the patient described his condition during the depression by saying that he had felt tired, could not concentrate his attention, many thoughts went through his head, and his mind seemed confused. He had resisted because he was puzzled and afraid.

It now remains for me to describe briefly the *states of emotional elevation with depressive symptoms.* Two clinical forms may be recognized: the *manic stupor and the unproductive mania.*

*Manic Stupor.*—This was the first mixed form recognized by Kraepelin and is supposed to arise from the association of the two depressive symptoms of difficulty of thought and psychomotor inhibition, with a manic mood of exhilaration. These patients are very inactive, speak little or none at all, and only the facial expression may reveal the cheerful mood; one observes frequent smiling and even laughing. The patients may remain inactive and silent in bed, but nearly always they are given to little tricks and fun-making, and a high degree of distractibility is usually present. This mixed condition, when it persists for any length of time, is very apt to be mistaken for the catatonic form of dementia præcox. The case which I wish to describe briefly is a patient whom we have seen in several attacks. She has often been demonstrated by Prof. Meyer in his clinics where she has been repeatedly regarded by physicians called upon to examine her as a deteriorated patient. During the past eighteen years she has recovered completely from five attacks, all of which have been exactly alike.

During the psychosis the patient is practically mute. She sits about with head slightly bowed, watches slyly what goes on, smiles freely, turns

her face away when noticed. Her movements appear inhibited, her actions are hesitating and incomplete. From time to time, however, she seems to break through the restraint and accomplishes quickly some playful prank, e. g., leaps upon the table, grabs something from another patient, jumps into bed with her clothes on, pulls at the physician's coat tail as he passes along, or snatches his pencil as he writes. When pressed with questions her lips move, she smiles much, but seldom speaks. Sometimes after a pause of a few minutes she answers a question, and occasionally she blurts out a remark spontaneously. Her few replies to questions always show good orientation. The same inhibited behavior, with starting and stopping, is seen in all of her activities, such as eating, dressing, walking, writing, etc.

In this case the patient gives evidence of being exhilarated, as shown by the smiling, the playful tricks and the mischievous behavior, but at the same time she is silent and appears inhibited in both speech and action. When she recovers she tells us that during the attack she felt stupid, had no desire to talk or do any work. No delusions or hallucinations have appeared in any of her attacks.

*Unproductive Mania.*—This is the second mixed form grouped under the states of *emotional elevation with depressive symptoms.* These are patients who show exhilaration and psychomotor excitement, but instead of the speech productivity of the manic, there are few utterances, sometimes even mutism. The patients look happy and are restless and busy, mischievous and erotic. They seem to be inhibited in thinking, therefore, speak very little or make simple and absurd remarks.

A school girl of 16 was seen in a second attack. She was at first entirely mute, but showed a great deal of smiling and grimacing, was very restless, performed many antics, stood on chairs, turned somersaults, sprang from bed to bed, pulled pictures from the wall, jumped into a tub full of cold water, showed constantly much restlessness and a great deal of hilarious activity. With this exhilaration and excitement she did not talk at all. Later she began to speak and showed a flight of ideas, the clinical picture corresponding then to that of the ordinary manic excitement. On recovery she said that when she was mute her head felt heavy and questions annoyed her.

Such phases are not infrequent in the beginning of a manic attack, and appear to grow out of the association of a manic mood and psychomotor excitement with some thinking difficulty, as evidenced in the patient's lack of speech productivity and complaints

of mental dulness. When mutism is present the differentiation from catatonic excitement may be difficult if one has to depend merely on the symptomatological picture.

In the foregoing groups I have attempted to sketch merely in outline, and give illustrations of, the mixed types most commonly met with in practice. It must be remembered that the divisions are more or less arbitrary and that gradations and manifold transitions are to be expected. Of all of the cases used as examples it can be said with reasonable certainty, in view of the outcome of the psychoses and appearance of typical phases, that they belong to the manic-depressive group. A review of a large material shows that clinical pictures such as have been described occur frequently in manic-depressive attacks, not only as a transitory phase, but also as a symptom-complex lasting for weeks or months, and in a number of cases the entire psychosis has the characteristics of a mixed attack. The recognition of these mixed forms is, therefore, a matter of practical importance.

Many of the cases occurring in young persons are regarded as dementia præcox until later on in the psychosis a typical manic or depressive attack appears and is followed by recovery. It is especially important to realize that in these mixed conditions particularly, symptoms occur resembling very much certain reactions which are often regarded as ominous prognostic signs and associated with dementia præcox. Thus one finds in mixed attacks conduct that appears odd and inconsistent, peculiar and fantastic ideas are frequently expressed and reactions are observed which simulate closely the incongruity between mood and thought seen so often in deterioration cases. It must be strongly emphasized that in these mixed conditions, as in other psychoses, *we cannot safely attach diagnostic or prognostic importance to individual symptoms unless we know something of their foundation and the general setting in which they occur.* This means careful consideration of all the facts obtainable regarding the development of the psychosis, including the type of personality to start with, the causes responsible for the unbalancing and the mode of onset as well as a painstaking study of the individual clinical symptoms. In cases analyzed in this way we will be able to show that the peculiar behavior and unusual emotional reactions above men-

tioned have an entirely different origin and meaning from the superficially similar symptoms seen in dementia præcox.

It would lead too far to undertake on this occasion a full discussion of the questions raised by Dreyfus in his attempt to identify involution melancholia with the mixed forms of manic-depressive insanity.[3] Suffice it to say that the argument is based principally on the idea that the insufficiency (or inhibition) complex may appear merely in the form of a feeling of inadequacy, not of a general nature, as is usually the case in manic-depressive depressions, but as a feeling of subjective inhibition of a partial or circumscribed character. That is to say, the feeling of insufficiency may be felt in only one or several of the various mechanisms by which the mental and motor reactions find expression, e. g., a patient may complain of a feeling of indecision, loss of will-power, lack of ambition for work and inhibition of the natural feelings of affection or love, while as regards memory, mental grasp, and rapidity of thought, there is no feeling of inadequacy. Such a condition of "partial" or "selective" subjective inhibition, common in manic-depressive depression, is, according to Dreyfus, also a characteristic of the involution depression and coupled with fleeting changes in mood, and the fact that the involution depressions do not show deterioration in spite of long duration, the conclusion is reached that these depressions belong to the manic-depressive group.

The whole work is a good example of the statistical method—we learn from such an analysis how many patients showed certain symptoms and how many recovered. The author's aim was to see if the symptoms present fitted into a particular schematic formula supposed to characterize a definite form of disease. A few unimportant features in the symptomatology are picked out and because the patient recovers these are raised to diagnostic importance. As a matter of fact, we could hardly miss just such symptoms in *any kind of a depression at one time or another.*

The occurrence of an anxious affect is by no means uncommon in manic-depressive attacks, and the agitated mixed type, which has been described, gives the general picture of an agitated depression; the presence, however, of manic traits will usually serve

[3] For an abstract and discussion of the work by Dreyfus, see the New York State Hospital's Bulletin, December, 1908, p. 499.

to differentiate these cases from a group of involution depressions, in which manic-depressive features cannot be demonstrated, and a forcing of these into the manic-depressive group is not justified by any facts brought out in the work of Dreyfus. Our material affords many reasons for keeping a group of involution depressions apart from the manic-depressive psychoses; they appear to arise out of a different etiology, show important symptomatological differences, run a different course from the manic-depressive depressions, and are especially dangerous to the life of the patient.

From a theoretical point of view the mixed phases of manic-depressive insanity are of great importance and the occurrence of such peculiar combinations of symptoms must be taken into consideration in any conception of the nature and mechanism of the manic-depressive reaction. Neither experimental psychology, physiological chemistry nor studies in metabolism have so far given us any knowledge as to the nature or the cause of the manic-depressive attacks. Anatomical studies do not indicate that we have to do with any essential brain disease. An analysis made by Hoch of the constitutional type or mental make-up of individuals who suffer from manic-depressive attacks has developed a most interesting and stimulating line of thought.

The manic-depressive reaction, when observed in its simplest form, does not appear so much as a special disease or pathological process as an exaggeration of conditions belonging to our normal experiences (Meyer). This prototype in normal life is found in the emotional variability and fluctuations in efficiency and capacity, which although often only faintly developed, seem to be an intimate part of our make-up. When these emotional waves and fluctuations in activity become sufficiently marked to attract attention, we recognize the individual as a slightly abnormal person, and from these unstable individuals, who show merely such constitutional oscillations, the transition to the mildest types of manic-depressive seems clear and well marked. Although the simple manias and depressions appear to have their prototype in certain biological reactions deeply rooted in our make-up, we do not as yet know how to account for the peculiar combinations or dissociations which occur in the *mixed* manic-depressive attacks. Whether or

not such mental states have a recognizable counterpart in normal mental life is a question that calls for further analysis of types of personality and particularly a study of the make-up of those individuals who show such mixed phases as have been described.

## Summary.

The foregoing review leads to the conclusion that in the concept of the mixed forms of manic-depressive insanity Kraepelin has furnished us with a viewpoint helpful in the understanding of certain obscure clinical pictures, because it allows us to identify in unusual combinations, the same mood abnormalities, thought disorders and psychomotor reactions that we know and use as prognostic guides in the ordinary manic-depressive attacks.

Clinical experience teaches that mixed states occur frequently as transitory phases in the course of otherwise typical manic or depressive attacks, but in some cases we see that the entire psychosis has features of a mixed condition. Because of the odd clinical picture and reactions that appear inconsistent, the mixed attacks are most often mistaken for dementia præcox. A more careful analysis of these mixed phases is urged in order that we may learn to recognize such clinical forms when they appear independently of typical manic or depressive attacks. Further investigation of the types of mental make-up, out of which manic-depressive attacks develop, is most important and may throw light on the peculiar combinations of symptoms seen in the mixed phases of manic-depressive insanity.

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## DISCUSSION.

Dr. Abbot.—This is an exceedingly interesting paper and a good description of the mixed type. My own experience is that we get comparatively few pure types, that is, in almost all cases we get one or two symptoms of other types intermingled with the usual symptoms predominant of the prevailing type. For example, in our cases of exhilaration we find occasionally quite marked retardation or confusion, or in our depressed cases we find here and there a breaking out, if only for a few moments, of a little manic phase, lasting perhaps only a few hours or minutes, and in any case at any one time we rarely fail to find some symptom belonging to one of the other types, though the case predominantly belongs to one of the four dominant types the doctor has described.

Dr. Blumer.—A clergyman in New York the other day, speaking of members of his own profession, said they were idolized at thirty, criticised at forty, ostracised at fifty, Oslerized at sixty, and possibly canonized at seventy. I don't know whether the ten-year rule applies equally to members of the medical profession, and I rise with some diffidence to make a criticism, especially since the last speaker, if I may judge by surface indications, has not yet reached the decade of life at which he may be properly criticised. And yet those of us who are never criticised are never corrected.

I rise to be myself put right if I am wrong and I hope Dr. Kirby will not regard the criticism as trivial or flippant. While the prevailing tendency is to Germanize our psychiatry, it seems to me that no defiling hand should be laid by any student upon the English language itself. I have noticed in several of the speakers here to-day (nearly all of them who have discussed the subject of manic-depressive insanity) that they called the psychosis "mānic-depressive" insanity, using a broad "a." Dr. Kirby probably has some hesitancy himself about it because on one or two occasions he did say "manic-depressive," pronouncing the "a" short as if by accident. I would like to know why manic-depressive insanity is so mispronounced; whether it is from a supposed translation of the German form, "manisch." Already the tendency to introduce German words into our psychiatry without attempting to translate them is everywhere apparent, and that, it seems to me, is a confession of the poverty of our own tongue which is often made needlessly, but there is surely no good reason why the English form, manic, should be pronounced as if it were a German word.

# IMPRESSIONS OF SOME ASYLUMS IN SCOTLAND.

By C. A. DREW, M. D.,
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Some years ago a member of this Association, who had visited many of the asylums and hospitals for insane in Great Britain and on the Continent, said to the writer: "If you wish to study laboratory methods principally, I advise you to put in all the time you can in Germany, but if I were to be insane I think I would rather take chances in a Scottish Asylum than in any hospital for the insane I know of outside of Scotland and certain small hospitals in our own country." We did not then realize the personal need of asylum treatment but were confident our medical friend had a good eye for the comforts of this world and the thought grew, nourished by reports from other sources, that the asylums of Scotland might be among the most interesting from the clinical viewpoint of all the hospitals for the insane across the seas. So it happened that we found ourselves in the land of "Robbie" Burns for the first time about the middle of September, 1907. The summer had been a rainy one—even for Scotland—as the uncut grass and unharvested grain bore eloquent witness. But September was making amends. Not even the early autumn days of northern New England, nor the late autumn days of our own middle west could have been more delightful than the two weeks in which we were leisurely approaching the Scottish asylums through Westmoreland and Cumberland,—the "lake district of England,"—and the lakes and highlands north of the Forth and Clyde.

We were first introduced to a Scottish asylum at Dumfries, in one of the garden districts of Scotland, a short ride from England's northern boundary. Crichton Royal Asylum is one of the best endowed and most favored of all the Scottish asylums, and for a good first impression one could hardly do better than to visit Dumfries on a fair summer's day. The soft reddish stone buildings sufficiently detached to avoid a crowded appearance, the

gently rolling garden and pasture land, like the surface of northern England or our own southern Iowa, with a fertile soil and frequent showers or misty rains, all combined to favor this Royal institution. We were assured that for twenty-five years or more this asylum has had in Dr. Rutherford one of the ablest administrative superintendents of Great Britain.

We did not learn that any effort had been made to make this,—the richest of Scotland's asylums,—a teaching center or a leader in laboratory research work.

In 1907 there were in round numbers 18,000 insane and feeble-minded persons under the General Board of Commissioners in Lunacy for Scotland, about 3000 of whom were boarded out in private dwellings.

The Crichton Asylum is one of the seven Royal asylums all of which, we understand, were financed by legacies, subscriptions and donations prior to the Scottish Lunacy Act of 1857, which marked the beginning of the building of so-called " district asylums " for pauper insane, supported by public taxation.

From 1857 to 1907 Scotland had erected nineteen district asylums, in which, at the latter date, were cared for 9000 of her 18,000 insane. This low average of less than 500 patients per district asylum is in rather marked contrast to the many very large public asylums in England and to a smaller number of very large hospitals for the insane in the United States. It seems to be not unlikely that the smaller asylums in Scotland have made less difficult there the progress in practical psychiatry, so marked during the last two decades.

In addition to the seven Royal asylums, accommodating nearly 4000 patients, and the nineteen district asylums, accommodating upward of 9000 patients, and the 3000 patients boarded out in private dwellings, the report of the Commissioners of Lunacy shows that in 1907 there were 104 patients in private asylums and over 1300 patients in insane wards of poorhouses with restricted or unrestricted licenses.

Scotland has no separate asylum for her criminal insane and had only 51 inmates in the criminal lunatic department of H. M. prison at Perth, January 1, 1907.

The custom in Great Britain is to transfer patients to the Broadmoor Criminal Lunatic Asylum in England and return

them from this asylum to the district asylums in Scotland or the county and borough asylums in England so soon as their sentences have expired.[1] This is in contrast to the practice in Massachusetts, but is in harmony with the practice in New York state, if I am correctly informed.

Partly because the Broadmoor Asylum is a long distance from the prisons and asylums in Scotland, and partly because the insane convict is held in the asylum for the criminal insane only till the expiration of his sentence, it has been found expedient to send to Broadmoor only those convicts serving long sentences and those held "during His Majesty's pleasure," which latter form of commitment gives the patient about the same status as the "court case" has in Massachusetts and New York. As a matter of fact, the influence of English law and the geographical location of institutions, working with other forces, have so eliminated the insane convict from the Broadmoor Criminal Asylum that on January 1, 1907, with a population of 780 (574 men and 206 women) there were less than 50 patients of the convict class in the asylum,—732 patients being held "during His Majesty's pleasure" or the order of the Secretary of State.

On Duke Street in Glasgow are the observation wards for mental cases of the Eastern District Hospital, widely known as "Dr. Carswell's Observation Hospital." This hospital was of peculiar interest because it is the Scottish representative of the much talked of psychopathic hospital of our own land. From the opening of this hospital in June, 1904, with about fifty beds, to May 15, 1907, nearly 1100 patients had been received and treated, with 475 discharged as recovered and 188 discharged as improved. It is interesting to note in this connection that there were 2½ times as many discharged "recovered" as were discharged "improved," and that both combined (663) equalled 61 per cent of the number admitted.

In "Pavalion F" of the Albany (N. Y.) Hospital there were admitted 784 mental cases from February 18, 1902, to February 28, 1906, of whom 211 were discharged recovered and 244 discharged improved. Here we may note that those discharged as "improved" exceeded those discharged as "recovered," in marked contrast to the statistics of the Scotland observation hospital, while the sum of those discharged recovered and those discharged im-

proved (455) equalled 58 per cent of the number admitted. We judge from their respective reports that the types of cases admitted to the Scottish and New York observation hospitals are not very different; alcoholic cases were most numerous in each observation hospital, with a depressive form of alienation a close second as to numbers. Paretics and epileptics were frequently admitted to both hospitals. It seems to us probable that the relatively larger proportion "recovered" from the Scottish hospital and the relatively larger proportion "improved" from the New York hospital represent the respective viewpoints of the individual physicians who pass judgment on the mental condition of those discharged.

The Glasgow Hospital at the time of our visit was as quiet as the wards of any general hospital.

We do not understand that Dr. Easterbrook, Superintendent of the Ayr District Asylum for five years prior to 1908, was the originator of the open-air, rest-in-bed treatment in Scotland. Indeed, we learn from the report of the Commissioners in Lunacy that Dr. Oswald of the Glasgow Royal Asylum was one of the first to introduce this form of treatment there. But to whomsoever the credit of introduction may be due, we found the Superintendent of the Ayr District Asylum a most enthusiastic advocate of this aid to mental medicine. Not only were the acute cases of both sexes resting in bed under a ground-glass covered porch on the south side of a new hospital building for acute cases, but the restless, chronic, noisy and untidy cases were taken from their rooms each morning and put in bed in the open air, sheltered by shacks wide open to the south.

The natural result of removing the noisy and destructive from the building during the day into the open air was to leave the asylum building a restful place for the quiet and infirm cases. The outdoor air of a north latitude tends to make the restless one keep under the clothing, so that the bed-habit is much more readily established, metabolism is enhanced and nutrition improved almost without exception. The high-pitched tones of chronic excitement, so disturbing when confined within echoing walls, hardly disturbs the hyper-sensitive brain when the vibrations are unconfined in the open air. Bath robe and slippers hung on the shack wall and a board walk led to the asylum toilet room. One nurse was having no trouble in attending to the needs of ten or a dozen noisy patients

and we could readily believe that a day in the open air with the increase in nutriment from an outdoor appetite would be a fairly good guarantee of a reasonably quiet night. The method is so simple and the advantages so obvious that we wondered why we had not, from earliest time, kept our noisy and destructive charges in bed through fair weather days in shacks or under an open sky.

There was, it seemed to us, a remarkably effective and pleasing individuality to the new hospital for acute and infirm cases at Ayr. The photographs will give a more comprehensive idea than a pen picture. The hospital is one story and provides 154 beds. "The walls are of white freestone outside and of single brick inside, the stone and brick walling being separated by a three-inch air space. The brickwork is finished internally with Keen's cement below (six feet) and adamant plaster above, all internal angles and corners being rounded off to facilitate cleaning. The floors are in selected narrow maple stained and polished. The floors of bath rooms, conservatories and corridors of the north wings are in terrazzo. The walls of the conservatories are in glazed white brick; the lower walls of the bath rooms and kitchen are tiled and the roofs are slated with red tile ridges."

It would require the full limit of our paper to do justice to this complete hospital, all on the ground floor. You will notice that each ward has its own diet kitchen on the north and sun parlor on the south; that there is a large sun room or "winter garden" adjacent to the reception ward, with a large south veranda which is utilized for the open-air, rest-in-bed treatment, so conspicuous a therapeutic measure at this asylum. Each ward has a few single rooms looking east or west which may be used as isolation or "observation" rooms. Dr. Easterbrook believed with Dr. Clouston that there are periods in the course of certain psychoses of certain individuals when isolation for brief periods is of some benefit to the individual and of much benefit to other patients. In addition to the six single observation rooms belonging to each ward, there is an annex for infectious and contagious cases, at the eastern extremity for women and at the western extremity for men, each complete, with kitchen, bath room, observation rooms, nurses bedroom and a small south veranda. The assistant matron's suite of rooms occupy a convenient central position dividing the women's infirmary wards on the east from the men's infirmary

wards on the west. The assistant matron, it should be remembered, is a graduate of a general hospital training school. She is, in Scotland, a refined woman, responsible to the head matron and superintendent, and paid usually forty pounds a year, less than $18.00 per month of American money.

The infirmary wards are double wards, 84 feet long by 48 feet wide, partially divided by a longitudinal partition ten feet high which is clear of both floor and ceiling for cross ventilation, the upper six feet being of glass and wood to facilitate supervision.

If I were to defend so lengthy a description of this model hospital, I might say that the subject more than deserves the attention given it. Dr. Easterbrook has written,[1] "*The essential principle aimed at in the design of every ward has been to facilitate, structurally, the work of the nurses.*" In our opinion, the aim was high and the result a signal success.

It is about one hour's ride from Ayr to Glasgow and a little more than an hour from Glasgow to Edinburgh. In a sense, Glasgow and Edinburgh are rival cities, beautiful cities both, each almost surrounded by the fertile lowlands between the Firth of Clyde and the Firth of Forth. Both cities have fine buildings, beautiful streets, and noble institutions. Each has its famous university and its well equipped hospitals. If Glasgow may claim preeminence for its population of nearly three quarters of a million and its commerce on all the seas, the gray old capital city may boast of its natural beauty, its history and the larger number of students and scholars it draws from countries of the civilized world. Glasgow has its Royal asylum and large modern asylums of expensive structure for its indigent insane at Gartloch and Woodilee. All these are up-to-date and under excellent management. Edinburgh cares for its indigent insane in a new institution at Bangour, built on the village plan, with cottages more widely separated than the Hospital for Epileptics at Monson, Mass., which is built on much the same plan. This asylum had nearly eight hundred acres of comparatively rough land, more land than any asylum in Scotland except at Dumfries, which latter Royal institution seemed to have the most and best of all material things.

[1] "The New Hospital at Ayr Asylum," Journal of Mental Science, July, 1907.

At Bangour all the cottages were new and the percentage of quiet chronic patients seemed large. About 50 per cent of the patients at this village hospital were sleeping in dormitories without observation at night except that the head attendant slept in the same house. Here earthen "chambers" were provided for the sleeping rooms and there were single isolation rooms with double doors having narrow thick glass panels resembling a large telephone booth, well supplied with fresh air and an electric fan exhausting from the ceiling. The efficient administration of such an asylum through northern winters must, at times, tax the resources even of such an able administrator as Dr. Keay.

A member of our Association approaching the Edinburgh Royal Asylum for the first time must feel a sense of nearing new but familiar things. To some of us whose reading dates back for years "Morningside Asylum" is a more familiar name than any American hospital beyond our own state or personal service. Under the spell of Dr. Clouston's graphic pen, we have known all sorts and conditions of cases at "Morningside." Here has been the leading center for the teaching of clinical psychiatry in Scotland for many years. "Craig House," the new Craig House, a beautiful and costly structure, occupies a commanding view overlooking the city. This, the finest of the Morningside buildings, is most luxuriously furnished in all its parts. Its "Great Hall" for recreation is exquisite in artistic design and may well be the pride of Dr. Clouston's heart.

Morningside has had, and still has, both private and pauper patients. Prior to the opening at Bangour this asylum had been crowded for some years with an excess of pauper patients and the death rate had been comparatively high. Aside from Craig House, Morningside is not so very different from the older private "Retreats" in America.

At the time of our visit to Scotland in 1907, hope was high and expectation keen that in the diphtheroid bacilli discovered by Drs. Ford Robertson and MacRae in the fluids and tissues of persons suffering from general paralysis, a micro-organism had been found which would prove to be the cause of this organic brain disease. Pathologists in England and Germany were mostly skeptical or scornful, it being generally claimed that the bacilli of Robertson and MacRae could be found in the terminal stages of other dis-

eases. It was sometimes admitted that the diphtheroid bacilli might contribute to some of the symptoms of paresis but about the only whole-hearted supporters of Robertson and MacRae were some of our own laboratory workers in the middle west.

Robertson and MacRae were not over-confident. They had experimented long and carefully and were being almost forced to send serum from their laboratory for trial all over Great Britain. They realized that the serum, in many cases, was to be tried by men who had openly disparaged their discovery. Their own investigations were not complete and their findings hardly more than tentative. And yet, certain lower animals, injected with the toxines of the so-called "bacillus paralyticans," developed symptoms as nearly like paresis as could be expected of a rabbit or a guinea pig. A number of cases of far advanced paresis at Morningside had made such remarkable improvement under serum treatment that the Scottish Board of Lunacy and the veteran Dr. Clouston supported Drs. Robertson and MacRae in the strong hope that an antitoxin might be made from these diphtheroid bacilli for the cure of paresis.

This was less than two years ago. Dr. MacRae has since then been appointed to succeed Dr. Easterbrook as superintendent of the Ayr District Asylum. If Dr. Ford Robertson is still pursuing his investigations for the Scottish asylums, we trust he has been provided with better facilities and a more convenient laboratory than he had two years ago.

In marked contrast to the magnificence of Craig House (Morningside) is the Stirling District Asylum at Larbert, where Dr. George M. Robertson had been making a reputation of which any hospital physician might be proud. Among the champions of non-restraint and the advocates of women nurses for insane men, Dr. Robertson is an enthusiastic leader. We went to Scotland with the purpose of making as extended an observation as possible of this institution. The Larbert Asylum is modest in its architecture and much less expensive in construction than the district asylums of Glasgow and Edinburgh. It has only about one hundred and sixty acres of land which would be valued at about $400.00 per acre (forty-eight acres were bought in 1906 for 3900 pounds). Some alienists in Great Britain regard Dr. Robertson as an extremist with a hobby. Some doubt the genuineness

of his non-restraint. Some said his practice would make the male nurse's position humiliating and drive him out of the service.

Retraint is defined by the Board of Lunacy as follows (see 49th Report, p. 16): "Whenever a patient is made to wear an article of dress or is placed in any apparatus which is fastened so as to prevent the patient from putting it off without assistance, and which restricts the movements of the patient or the use of hands or feet, the case should be recorded as one of restraint, irrespective of the reasons which may have led to the use of such restraint or of its having been used in accordance with, or contrary to, the wish of the patient."

Seclusion is defined: "Whenever a patient is placed by day in any room or locality alone, with the door of exit either locked or fastened, or held in such a way as to prevent the egress of the patient, the case should be recorded as one of seclusion, irrespective of the reason which may have led to the use of such seclusion or of its having been used in accordance with, or contrary to, the wish of the patient."

It is, I think, claimed by the officers of the Stirling District Asylum that no case of restraint or seclusion had been used at Larbert during the five years, 1902 to 1906, inclusive. We learn further from the 49th Report of the Commissioners in Lunacy for Scotland (p. 59), that there are three other Scottish asylums in which no case of restraint or seclusion has been recorded for the five years from 1902 to 1906. The three other asylums classed with the Stirling District are the Dundee Royal and Dundee District (under one medical management), the Haddington District Asylum and the Westermains Private Asylum. This report does not show the relative amount of so-called "chemical restraint" used in different asylums, and without a complete knowledge of the amount and frequency of the use of hyoscin and all depressant drugs, comparisons of restraints and seclusions are incomplete and may be misleading. This should be said, however, that our observation at Larbert did not discover the frequent use of depressant drugs. This asylum was more completely dominated by women than any other Protestant hospital for the insane we ever inspected. A head matron had more authority than any resident officer except the superintendent. It was she who engaged and dismissed employees, usually with the approval of the superintend-

ent, for the wards as well as for all the domestic departments. This head matron was a superior woman, a graduate of a general hospital training school who had demonstrated her superiority and been promoted from a ward matron. So generally acknowledged was her fitness that the assistant physicians enjoyed the situation. An assistant physician in another asylum, speaking of the organization at Larbert, remarked ironically, "We would have a sweet time, really, if our matron were given such authority."

In an after-dinner speech at Larbert on the occasion of the dedication of a nurses' home, Dr. Clouston, praising the results at Larbert and claiming credit because Dr. Robertson had been trained at "Morningside," said, in substance, with sly humor: "Dr. Robertson's signal success, to my mind, is due to his keen insight into woman's nature. He who best knows woman's heart obtains best results from woman's service." The laugh was on Dr. Robertson but we are inclined to think there was more than a grain of fact in Dr. Clouston's pleasantry. If such responsibility and authority as were prudently exercised by the head matron at Larbert were given to the wrong woman, there would certainly be a "hot time" if not a "sweet time" in the average asylum.

Through the courtesy of the Stirling District Lunacy Board and the superintendent we were furnished with keys and admitted to all the privileges of an assistant physician at Larbert and cordially invited to stay as long as we wished. We hoped to be useful as a substitute for an assistant during a vacation, but we were delayed past the vacation season, so that the only part we could play of real service to the assistants was that of proxy at chapel service on Sunday. This service was warmly appreciated and accepted as legal tender for all our obligations. We inspected the wards at different times alone as well as with officials. Each building was in charge of an assistant matron. We saw not the slightest evidence of seclusion or mechanical restraint and the hospital atmosphere was very pleasing. The sleeping rooms, when locked from the outside, could all be opened by turning a knob from within so that no patient could be locked in. Only two of the men's wards had men nurses and these were under supervision of an assistant matron.

We had not been accustomed to see patients smoking in bed, but in the infirmary for men at Larbert it was no unusual thing

for the woman nurse to strike and hold a lighted match while the patient in bed would pull at his pipe. When the pipe was working well, she would deftly fit a perforated cap to the pipe to protect the bed and the old man would smile at the white-capped nurse as if she were an angel thinly disguised.

On a certain morning's visit to a men's receiving ward we were interested to watch a muscular young Scot held in bed by four comely young women nurses. He was a mild "manic" case and the expression on his face resembled a grin more than fear or rage. After watching the struggle for a time, we could not escape the impression that his desire to get out of bed might not be so great as his desire to be restrained. Be this as it may, we may safely assume that, when fully recovered, memory of his asylum experience will not be associated with any great dread of another commitment.

In the congregate dining-room, the men and women were not separated, even by screens or banks of flowers, as we have seen in our own country, but were seated at the same table, a man between two women or a woman between two men like guests at a banquet. There was method and a purpose in all this—the purpose being to re-educate and strengthen self-control under natural conditions.

When Dr. Rutherford resigned the superintendency of the Crichton Royal Institution at Dumfries in the summer of 1907, to retire on a pension of 1500 pounds a year, there were half a dozen strong men thoroughly fitted for promotion in the public asylums of Scotland. The chief executives at Ayr, Bangour, Larbert and Perth District Asylums were each and all particularly able, ambitious and progressive men. One was the author of a scientific work on psychiatry of exceptional merit; one had won a wide reputation as a champion of non-restraint and women nurses on men's wards, besides being an able teacher of clinical psychiatry. One had proved his ability by building a large institution on unusual lines and solving difficult administrative problems with signal ability, and one had built an exceptionally good hospital for acute cases and had done much to popularize the open-air, bed treatment of both acute and chronic cases. These were but a few of the props on which honorable reputations had been builded, but to mention these serves our purpose. It was an interesting and

evenly balanced competition. There were also competitors from England. "The remarkable thing about it is," remarked Dr. Clouston, in speaking of the candidates for the superintendency at Dumfries, "that I haven't an idea which one will win, although each one of the candidates was formerly my assistant." It was not till after we reached home that we learned that Dr. Easterbrook had been appointed at Dumfries. Shortly after this came news of Dr. Clouston's resignation and the appointment of Dr. Robertson of Larbert to the superintendency of the famous "Morningside Asylum," Dr. MacRae having been appointed superintendent of the District Asylum at Ayr.

Since the summer of 1907, Great Britain has lost the active services of two strong men: Rutherford, preeminent as an administrator, and Clouston, as a teacher and writer, the peer of any man.

We made no attempt to make an exhaustive study of the asylums of Scotland. Some of them we did not even visit. We saw no evidence that hydrotherapy was much esteemed there, but we feel sure that an adjunct found so useful in Germany and America will not long be neglected. For the spirit of progress prevails in Scotland even as the spirit of liberty was dominant in the days of Wallace and Bruce.

# A STUDY OF THE AUTO AND SOMATOPSYCHIC REACTION IN FOUR CASES OF DEMENTIA PRÆCOX.

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The dementia præcox group seems ever widening to include increasing numbers of variations from the three older sub-types, hebephrenic, catatonic and paranoid. The clinical method of Kraepelin has been of an undoubted value in the comprehensive consideration of symptoms and description of the case as a whole, as well as in the grouping together of these cases to form a nosological entity upon which in a practical manner prognostic, diagnostic and therapeutic measures can be based.

The application of Wernicke's psychological analysis has lent further assistance in the description and study of single symptoms. Wernicke distinguishes primary and secondary identification or sensation, and assumes that secondary identification, which comprehends all the functions implied in mental grasp and elaboration, is the seat of disorder in all mental disease. Secondary sensation is divided into auto-, allo- and somatopsychic fields, or subjective consciousness as relates to the ego, its projection and environment, and its reciprocal relation to the body. Furthermore, disorders such as occur chiefly in the sensory sphere are termed psychosensory, those of thinking, intrapsychic and those mostly involving the motor mechanisms, psychomotor.

The elaboration of such methods has led to an individual psychology, which makes each case of mental disorder a variant from others, and through which Breuer and Freud, and later Bleuler and Jung, have inaugurated a new epoch in psychiatry by such works as the "*Diagnostische Association Studien,*" "*Affectivität, Suggestibilität, Paranoia,*" "*Psychopathologie des Alltagsleben*" and "*Die Traumdeutung.*"

Tiling as well as Freud came early to the conclusion that the importance of the individuality in the origin and the formation of

the psychosis was almost boundless. Proceeding along these lines, Jung, in studying the association in dementia præcox, has come upon important and far-reaching facts and has even attempted to explain the etiology on psychological grounds. He has found an identity in the psychological mechanism of hysteria and dementia præcox. Both show an association complex which the individual tends to elaborate in every direction until he is forced out of all adaptation to his environment. In hysteria Jung is sure of the causal connection between the complex and the disease, but not so in dementia præcox. In the latter the complexes become more tenaciously fixed and he further postulates that the complex produces, in addition to its psychological effects, an " X " or metabolic toxin which completes the psychic mutilation. Yet Jung does not deny the possibility that the " X " may primarily result from other than psychological reasons.

As for the main facts in the psychopathology of dementia præcox, various observers preceding Freud have all called attention to the existence of a central disturbance, although different terminology has been used, such as " apperceptive dementia " (Weygandt), dissociation and *abaissement du niveau mental* (Janet), tendencies toward fixation (Masselon, Neisser) and affect dementia (Kraepelin).

Then came the demonstration by Freud of the presence of split-off series of ideas, their repression and subsequent reappearance and fixation as complexes.

Interesting and far-reaching as are the theories of Bleuler, Freud and Jung, it is apparent that the psychoanalytic method apparently does not disclose a complex in every case of dementia præcox to which the dissociation may be attributed. Especially is this true in the hebephrenic and catatonic forms. It is also apparently true in the four cases whose abstracts follow.

In considering etiology in such types as these one is more inclined to consider the " X " or toxin is of primary importance, rather than secondary to a psychological complex. The nature of such a toxin and the method of its action remain to be disclosed by a better chemistry and histopathology of the future.

Case I.—Male, 19, single. Family history is bad on both sides. Both parents are intelligent and highly educated. Father was alcoholic at the

time of patient's conception, and has remained so since; at the time of the patient's admission to the hospital he was going through an attack of delirium tremens. Mother had some sort of psychosis at 18, lasting six months.

Patient is the sixth of seven children; the oldest is a talented musician, but erratic and eccentric; the third has probably an aborted form of dementia præcox; the others are said to be well. Our patient, up to the age of 14, was considered to be the most healthy and brilliant of all the children. In most of his school work he had difficulties, but at a precocious age he read Darwin, Spencer and Huxley. He was also musically talented, and at one time gave great promise as a violinist. He has always been of an argumentative turn of mind, and delighted to enter into weighty discussions on philosophical and metaphysical subjects; his sexual life was normal, as far as could be ascertained. Personal history in other regard is negative.

About 14 he contracted a fever, which may have been typhoid, though not identified as such. During convalescence he refused to eat and was very thin; he lived mostly on milk. He improved somewhat, but later, on reading some books on physical culture, he decided he would be stronger if he lived on a very limited diet. He was in a very nervous condition. After a few months' schooling his health demanded his withdrawal and he was sent to Florida, where he improved and was able to enter school the following fall. Soon he was again compelled to leave. His condition steadily grew worse, and at 17 he was sent to a sanitarium. Later he improved and again attempted school. He grew sluggish and indifferent mentally and was once more taken out.

In the spring of 1908, at the age of 19, he was sent to northern Maine for the summer. He then complained of a loss of feeling for things in general and of a general sense of unreality. He expressed himself volubly and intensely. He complained of the uncongeniality of his home surroundings. On his return from Maine the feeling of unreality was more marked; he complained of a general sense of vagueness, said at times he could not distinguish between his right and left hand. All mental processes seemed slow. There was a tremor of the lips, some cutaneous cyanosis, tongue coated and breath foul. Mental condition showed variability. He would suddenly change from an apparently bright and normal state to one in which he became confused and retarded, and at times impulsive.

Shortly after admission the following interrogatory was taken with the aid of a stenographer:

Dr. How do you feel to-day? Pt. I feel, I don't feel. Dr. Why don't you feel? Pt. (pause). Well, I don't know enough to tell you why I don't feel—I don't—it would take a man who knows a great deal, a very great deal about physiology, psychology and everything else to tell you the exact reason why I don't feel (pause). Don't you think it would (smiling)? Now, if you want me to talk I will talk all you want

(smiling). Dr. You told me last night you thought you were going to sleep. Pt. O, yes, I am, I gradually went to sleep last summer (pause), gradually went to sleep—deadened—poisoned—poison forming from malassimilation, and the poison is the result, not the cause—that is, the cause of the cause is primarily the deadening of all these nerves through here and the inability of these nerves to tell the brain that there is a pain in here (pointing to stomach), and that's as near as I can tell you. That is a month ago, six months ago, in the spring, when I would have—my food wouldn't really digest properly—there would be no pain and, of course, gradually grew worse—deadened. Osler could tell you what is the matter with me. What's this for, to see whether I am sane or insane (looking at stenographer and smiling)? Dr. No, I want to get a description of what you think. Pt. I could have told you perfectly two weeks ago, but since then I have deadened very much, all associations and memory, association and memory and (pause) various other things that go to make up what you choose to call self have gone; the idea of possession, that my arms and legs belong to me, that's gone—I don't feel anything at all—I appear to other people, I am not self at all. Dr. You feel that you have changed? Pt. No, I am nothing now, I have lost myself, I cannot go back, I cannot look back—there is no memory, really. Dr. Then you have changed? Pt. Of course, I have changed. Dr. How do you mean? Pt. I gradually stopped—I was 18 then, and weighed 80 pounds. I went on a milk diet and went up from 80 to 145 pounds—gained 50 pounds in two months—9 pounds in one week—most I ever gained; and while I was gaining that I gradually deadened, that is, there was a loss—I got fat, but the legs would get all swollen up, with water, I think. My brother and I went to school and I couldn't do any real studying; in other words, I got fat, but I didn't get strong. There is no real, there is no real motor energy about my—whatever you choose to call it—no nervous energy. Then in the spring, after going to school, and I was very tired, I had been tired all that winter—all the winter before—slept all the time, wanted to sleep and I (pause) gradually went more and more to sleep, and felt as if my head was made of rotten blood (pause). I have lost all memory and associations and ability to go back, and inner feeling, lost all that entirely, and all retention of anything, for instance, when I go to, go up (pause), go on a fishing trip to the lake and come back, I couldn't retain it. I don't retain scenes, ideas of position. Dr. You remember them though? Pt. Yes, I can remember, all that's good, but suppose you have a lot of intellect, but haven't any feeling, what then? Well I gradually deadened in the summer and a (pause) kept on getting as much sleep as possible, and when I would go to sleep my whole arm, this arm (showing physician) would go to sleep; I would have to take this arm and hit it and wake it up, but there is no real memory. Dr. You have periods in which you feel real stupid? Pt. Stupid! I am stupid all the time. Dr. You are not this afternoon. Pt. I am not? Well, what is it? Suppose you are the most intellectual

person in the world, but you can't get out and fight for your living, well, what's that? I wouldn't want to sit in a chair—I have had about a million different selves. Dr. Last night when you came in you talked very well and then gradually grew confused. Pt. I don't remember anything—I am outside of myself—I am in myself. I feel inside—rather automatical—there is no sense of contrast of being tired or being refreshed, or the hundred of other contrasts that go to make up life—that's all it is—contrast—eating and sleeping and being tired and being rested—having pleasure and having pain, and the keener the contrast the keener do you live. I have lost all relationship with people—they are not human. You see, it's that association and everything have gone, and what have you got? Suppose you go into a restaurant and eat and you have no ears or eyes, or anything, and are utterly out of relationship with everything. I cannot talk to you now rationally (pause). Dr. Did you have an unhappy home life? Pt. I have never known what—I don't know what it is to be unhappy because I have had to adapt myself—you can call it unhappiness, but I have never had happiness, so I don't know what unhappiness is. Any way, if you see how much pain is in life—ultimate analysis is probably pain any way, isn't it (laughing)? I want to hear you talk now a little, if you talk I will respond (smiling) to your talk (pause). Now, the usual terms, I don't grasp the meaning of terms, there's where feeling comes in—you feel the meaning of terms—you feel the richness and color (pause) in a sunset (pause). Dr. And you have lost that feeling of appreciation? Pt. There is no appreciation—there is no appreciation—no. Dr. What do you think the outcome of your state is? Pt. What the result of it is (pause)? I have forgotten what result means now—what the result of my state is (smiling) (pause). Dr. I mean, do you think you are going to get better or worse? Pt. I think I am gradually shriveling up—going back into childhood (pause); I am quite sure I cannot get better—I am (pause) (yawning drowsily)—no, I don't think it's possible.

For some time the mental condition of the patient varied; he was often dull and sluggish, his motor discharges correspondingly slow and deliberate. He was often silly and childish in bearing. For awhile, in his speech and gait, he simulated an intoxicated person, and always explained his condition as due to his abnormal metabolism which formed alcohol within his system.

The physical examination disclosed the following points of interest. The skin presents a condition of hyperæmic congestion and cyanosis, especially noticeable on the upper back and neck regions. Pressure of hands elicits the so-called X-ray appearance. Dermatographic reflex consists of an intense white, immediate pressure line, with no subsequent red line. Pupils examined in the dark show a somewhat diminished dilatation. With the torch the left pupil reacts about half a millimeter, the right about one and a half, and both very sluggishly. The right is irregular in outline. The accommodative reflex is also diminished in

excursion and time reaction. The tongue is markedly coated and the breath odor is heavy and fœtid. All the deep tendon reflexes in the arms and legs are much increased. The hands and feet are cold and somewhat cyanotic.

During the eight months in which patient has been under observation, there has been considerable physical improvement, with a gain of about 15 pounds in weight. The childish reaction, the intoxication simulation, and the alcohol-formation ideas have largely disappeared. While there is less sluggishness in intrapsychic and psychomotor spheres there is a greater *abaissement du niveau mental* and narrowing of mental horizon and interest.

While patient's insight is still good he is not able to so clearly describe his subjective consciousness as before. In his daily routine he is careless and slovenly in his personal appearance and in his room. His chief interest is his piano playing, and in this he exhibits considerable skill. He keeps much of the time to himself; is sometimes observed to sit and stare in one direction for a half hour, or even more; he has also shown recently unemotional or so-called irrelevant laughter, chiefly at night when alone in his room.

The condition of the skin, pupils and reflexes remain the same as on admission.

Fifty words, chosen with respect to patient's individual characteristics, were used to test the association. The average reaction time of two seconds was prompt, and did not disclose any complex of pathogenic import.

Case II.—Male, single, 27; a Russian-Jew, born of ignorant and illiterate parents. Nothing was discovered of importance in the family history. Patient was the oldest of seven children. He obtained a meager schooling and at an early age was set to work at a sewing machine. He was ambitious to become a lawyer and entered a night school. His lack of preliminary education proved a great obstacle and he failed to pass his final examinations. Three months before admission to the hospital he developed, without sufficient reason, an irritability and impulsivity toward his father, and on several occasions threatened to kill him. He is very reticent when questioned about his father, but patient evidently in some way blames him and his home surroundings for his present situation; in other directions as well, patient has also shown some delusions of paranoid and persecutory character. He was tested with 50 association words—the average time for the whole was 3.9 seconds. The reproduction to the word "father" clearly indicated that a complex had been struck. No reaction was obtained for 23 seconds, then the patient replied "home." He has shown some irritability and impulsiveness toward certain nurses, which, in connection with a frequently occurring refusal to eat, may indicate a hidden paranoid constellation. He walks slowly and holds his body in a strained and awkward position. In conversing he often breaks into a

broad smile without demonstrable reason. The disturbance in the somatopsychic sphere is most prominent and interesting. He spends much of the time on the bed, because when he stands the left side of his chest "jumps so." He repeatedly complains of his heart, fears it is going to stop, says it has no more ambition than he has. Complains of a great variety of paresthesias in surface areas, such as burning, warmth, electric touches, pains and numbness. These often are fleeting in duration, and very localized in extent. Cephalic pain and girdle sensation, he often mentions. He complains of a mental dullness, and that things feel strange to him, or that he cannot think at all and doesn't want to.

In the physical examination the right pupil was more active than the left, and irregular in outline. The excursion of the left under torch-light was diminished. Accommodation reaction is also sluggish and restricted. All the deep tendon reflexes are increased. The extremities are usually cold and moist. There is a very slight grade of cyanosis. In the seven months the patient has been under observation there has been very slow, yet obvious, deterioration, consisting chiefly of affect dementia, an intellectual narrowing and a fixation of the somatopsychic complexes.

Case III.—Male, 27, single. The only son of cultured and intelligent parents. After puberty he evidently showed marked psychopathic predisposition. He was admitted to the Sheppard and Enoch Pratt Hospital in May, 1908. His psychosis was said to have commenced several months previously. The principal feature was the occurrence of mental states characterized by marked disorientation and dissociation in the autopsychic sphere. There were active hallucinations, both visual and auditory. All varieties of delusions of reference paranoid in character were expressed. There were also prominent somatopsychic disturbances, which were, however, at all times present to a lesser extent. Such a phase as the above would last on the average several days to a week, when the auto- and allopsychic disturbance would clear entirely with the return of a good insight and appreciation of having been through some kind of a mental attack. As previously mentioned there would persist, when in his best condition, some somatopsychic disturbance which resembled a neurasthenic reaction. The patient often complained of paresthesias similar in quality to those shown by Case II.

Physical examination was negative except for pupillary anomalies, which were an irregular left pupil and a sluggish light reaction and diminished excursion. Similar attacks to the one described occurred at regular intervals during his stay at the hospital. Between attacks patient's general reaction to the casual observer was practically normal. He was discharged improved, and when heard from recently was able to do some work in the jewelry business, and was considered in good condition by his family. Evidently so far there has been but little deterioration, and if we are right in assuming that the process is a dementing one, the progress is evidently very slow.

CASE IV.—Male, single, 23. Admitted in July, 1905. The psychosis of this patient is strikingly like that of Case III. The attacks, however, have occurred at more regular intervals, and last a week or 10 days, to be followed by a fairly normal interim of about the same duration. The transition into the attack usually takes a few hours. This patient left the hospital in 1907, but has been seen at intervals since then. He shows a well-marked physical and mental deterioration. Formerly an expert stenographer, during his well periods he is still able to do a little work along this line, but the quality of his work has obviously degenerated.

The cyclic-nature of the disturbance in Cases III and IV seem to support the theory of the primary importance of the "X" or toxin of Jung, especially as no complex of pathogenic importance could be discovered in either case.

Cases II and III exhibit peculiar interest from the standpoint of differential diagnosis, inasmuch as a single examination during several phases might easily lead to a diagnosis of neurasthenia. The importance of a correct estimate of such cases is obvious.

# EMPLOYMENT OF WOMEN NURSES ON THE MEN'S WARDS IN A HOSPITAL FOR THE INSANE.

By THOMAS J. MOHER, M. D.,
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To say that efficient nursing in a hospital for the insane is a very important matter is only to express a fact well known to every person entrusted with the responsibility of caring for the mentally afflicted. To say that the nursing of the insane, especially of male patients, is not what it should be, may appear to be an extreme statement; nevertheless I have come to this conclusion from observing conditions in different hospitals which I have visited both in the United States and in Canada, and my opinion regarding this matter is further strengthened by discussion with a number of superintendents and assistant physicians.

It is quite true that patients receive more medical care and attention than ever before, but it is doubtful if there has been a corresponding improvement in the character of the nursing. Here and there this matter has received special attention, followed by marked improvement, but there has not been that general advance along the line that, in my opinion, is desirable or possible. The directions and instructions issued by the medical staff lose much of their value if they are not carried out intelligently by well-trained and sympathetic nurses. The patients in a hospital for the insane need much in addition to medical treatment. The general conduct, the temperament, the tact of those under whose care they are placed and on whom they are more or less dependent during the whole time they are under treatment, both day and night, are important factors in their recovery, and the influence for good or evil under such conditions is not likely to be overestimated. To know when to speak or when to remain silent, when to restrain and how, and when to remain passive, are qualities that should be possessed in a high degree by nurses in charge of the insane. The soft voice of a woman, the absence of boisterous or profane language and the ability to properly look after

domestic affairs and keep everything clean, tidy and cheerful, all combine to render nursing effective. Nobody would think of placing patients in a general hospital under the care of male nurses, and while the conditions in such an institution and a hospital for the insane are very different, still in many respects the work is similar. We have the same need for cleanliness, for special diet, and for cheerful companionship in both cases. When you visit a hospital for the insane you cannot fail to observe how much better conditions appear to be on the women's wards, and this in spite of the fact that female patients are more difficult to control. Such conditions are not accidental. They are the result of better nursing, and it is only an evidence that women are better equipped by disposition and temperament to perform this work.

Believing as I do that female nurses might be employed with benefit in the men's wards of our hospitals for the insane I wrote to a number of superintendents to ascertain their opinion on this matter and also to learn to what extent women nurses were employed in this capacity at the present time. I received in all seventy-four replies from the superintendents of institutions located in Canada and the United States. Speaking roughly these institutions cared for forty thousand male patients and there were only three hundred female nurses engaged in caring for them. One can readily see from this that the matter of employing female nurses on men's wards has not been resorted to very generally in this country. An analysis of the replies received would seem to indicate that in thirty-four institutions female nurses assist in looking after male patients to a greater or less extent and that the superintendents in charge approve of this work. In fifteen other institutions female nurses are not employed in men's wards, but the superintendents regret very much that they are unable to effect this change for various reasons. In nineteen institutions female nurses are not employed in the men's wards and the superintendents in their answers fail to express an opinion on the matter. Of the whole number only six superintendents disapprove of the employment of women nurses on the male wards.

To treat this matter exhaustively would take more time than I have at my disposal. Moreover at different times papers have been presented before the members of this association giving a

historical review of the subject, with which no doubt you are all familiar. It will be sufficient for me at the present time to say that for many years female nurses have been employed in various institutions in Great Britain and the Continent and that the work has been carried on with much success. We also know that in many institutions patients, both male and female, are placed under the care of female members of religious orders, and when we visit one of these latter institutions we cannot fail to be impressed with the fact that so far as the domestic arrangements are concerned the work is most satisfactory. In one institution in the United States female nurses have been employed in the male wards since 1894, and, although there have been different superintendents in charge during that time, the work has been carried on continuously, and the present incumbent of the office speaks most enthusiastically of the results.

In the replies received the one fact that stands out prominently is that the great majority of the superintendents approve of placing women nurses on the men's wards, but find themselves hampered for various reasons in carrying out their wishes as successfully as they would desire. In some cases the trouble is due to the fact that facilities are not provided for the proper classification of patients. In others, again, it seems to be difficult to obtain the class of nurses that are required, and in some few cases it would appear that the general public view the matter with disapproval. There has been much difference of opinion with regard to the matter of placing female nurses in complete charge. Some superintendents find that such an arrangement is very satisfactory, but others again feel that the responsibility of the majority of the wards should be placed on male nurses. Some few express themselves in favor of employing a married couple to look after the men's wards. This difference of opinion is no doubt largely due to the fact that suitable nurses are more easily secured in some localities than others. It appears to me that institutions situated in rural districts are likely to secure a sufficient number of competent nurses more easily than can be done by institutions situated in close proximity to large cities. The locality of the institution is undoubtedly an important factor in the selection of suitable nurses.

It appears to be the general opinion of those in charge of hospitals for the insane that women nurses should at least assist very largely in the nursing of male patients, but many hesitate to make the change for various reasons. I shall refer briefly to some of the objections. Some appear to think that nurses would be in danger of bodily harm. If the plan I propose to outline is adopted there appears to me but little force in this objection. If nurses are not placed in disturbed wards and a sufficient number of male attendants retained in the wards in which danger might be apprehended this difficulty will very largely disappear. There is also in the minds of some people a belief that there is a danger from the employment of male and female nurses in the same ward. This is an objection which must receive consideration, but it might be overcome by selecting women nurses with care. My experience with nurses has convinced me that it is not difficult to find a large number who may be trusted in matters of this kind. If they cannot be trusted there they cannot be trusted anywhere, as those who wish to do wrong can find an opportunity, no matter where they are employed. It is sometimes stated that the presence of female nurses has an evil effect on male patients who are salaciously inclined. Actual experience disproves this statement and as a matter of fact we find better behavior from patients who are inclined to indulge in indiscreet practises. Again the proportion of erotic patients in any institution is very small and arrangements may be made to keep them out of harm's way. It is also claimed that the association of women nurses with male patients tends to promote coarseness in the former. I should think that in a normal person the effect would be quite the contrary. Any female nurse who might be influenced in this way is not qualified for a position in an institution in any capacity whatever.

Now no one realizes more fully than I do that my limited experience in this work does not entitle me to speak with any authority, yet, if you will permit me, I will briefly outline the plan I have followed in the Eastern Hospital for the Insane. It may assist those of you who are hesitating about making the change. In the first place I decided that no nurse should be placed in the men's wards until she had taken a full course in a training school and obtained a diploma. This means that your selection is made after you have had a nurse under observation for a number of years

and at a time when she is quite familiar with the nursing of the insane. When it is necessary to transfer a female nurse to the men's ward I always ask for volunteers and select the person whom I think is likely to prove satisfactory. The higher wages is an inducement and little difficulty is experienced in obtaining a sufficient supply.

In making the change I would not care to deprive a male nurse, who had charge of a ward, of his position, provided his work was fairly satisfactory, in order to provide a position for a female nurse. I think it is better to wait until a vacancy occurs through resignation or otherwise. In fact I deem it desirable that a female nurse should spend some time in caring for male patients before she is entrusted with full charge of a men's ward. This means of course that it will take some time to reach the ideal at which we are aiming, but by adopting this plan we will avoid friction and dissatisfaction and at the same time build on a solid foundation a structure that will endure forever.

Now it is just possible that different members of the medical staff in a hospital for the insane may entertain different opinions as to the advisability of employing female nurses in the men's wards. One must believe in it if he hopes for success, and it seems to me that the subject is of sufficient importance to deserve the personal attention of the superintendent. If the work is entrusted to a member of the staff whose ideas do not harmonize with your own, you cannot expect success, no matter how earnestly your assistant endeavors to carry out your wishes. It is necessary that the work be persistently supervised in order to obtain satisfactory results. You must take the time and trouble to give advice, directions and encouragement when required and above all let everyone understand that you intend to go on and continue the work until the plan you have adopted has been carried out in its entirety.

There appears to be much difficulty in knowing where and how to begin to make this change. In order to discuss this subject intelligently it will be necessary for me to make some reference to the classification we have adopted at the Eastern Hospital. It is a very important and very difficult task in many institutions, owing to lack of accommodation or to peculiar construction of buildings or to other causes, to classify our patients as we would wish.

Our own arrangements are far from satisfactory; still they are the best that we could accomplish under the circumstances. We have:

(1) Wards for the reception of new cases.

(2) Wards for convalescents.

(3) Wards for incurable cases who are able to work, who are very largely privileged, and as a rule enjoy good physical health.

(4) Wards for patients who are in the advanced stage of dementia, many of whom are obliged to remain in bed.

(5) Wards for disturbed or dangerous cases.

With this classification in mind let us consider where the nursing might be improved by the employment of women nurses. It is a fact that a large number of newly admitted patients retain enough intelligence to take considerable interest in their surroundings. They are able to appreciate any little kindness and sympathy that may be shown them. Properly prepared food, clean bedding, cheerful surroundings and a warm sympathy appeal to them and assist in establishing a feeling of contentment and happiness which are indispensable factors in promoting recovery in many cases. The existence of such conditions must be the result of satisfactory work on the part of the nurses in charge, and while it would appear that male nurses sometimes perform this work fairly well, yet female nurses, if carefully selected and properly trained, will fill the position in a more satisfactory manner. In order to explain my idea more clearly I will ask you to assume that each of the above wards would contain a number of patients that would require seven attendants or nurses to care for them. In this way you will understand the proportion of male or female nurses that I would deem satisfactory in each division.

Notwithstanding the opinion expressed by various superintendents, I would hesitate at the outset to place the ward for the reception of new cases completely under the care of female nurses, but of the seven nurses required in this ward, in my opinion, four should be women. By this arrangement of the nursing staff there would be very little danger of any serious accident resulting from the conduct of patients who were admitted in a disturbed condition. The three male attendants could take charge of the walking parties and give the patients the benefit of outdoor exercise of various kinds when required.

In the convalescent ward because of the fact that the mental condition, habits and temperament of the patients are better understood I would employ five female and two male nurses. By this arrangement the patients would be able to receive such nursing as they needed, and a sufficient number of male attendants would be present to assist in providing the patients with such recreation and entertainment as they required.

In the wards for incurable working patients I would employ three female nurses and four male attendants. The majority of these patients are employed during the greater part of the day, and it is necessary to increase the proportion of male nurses or attendants in order that they may take charge of the different working gangs that are engaged in outdoor or other occupations. The patients in this ward require very little nursing and it is not a difficult matter to carry on the work from a domestic point of view.

In the wards for patients in the advanced stages of dementia I would employ five female and two male nurses. Here there are a large number of bedridden patients as well as many who are indifferent to such matters as diet, etc., and who are usually careless in their habits. Many of these patients are as helpless as infants and require even greater care. Special diet must be provided, beds must be kept in a sanitary condition and the personal clothing must be changed frequently. In fact constant nursing and attention is required during both day and night. In this ward I would place a female nurse in charge without hesitation and allow her four female nurses to assist in the general work. I would appoint two male attendants to assist in the work of bathing, etc., and also to accompany those who were well enough to go out with the walking parties. I know that in some institutions female nurses have charge of these walking parties, but it does not seem to me desirable that they should be so employed in the case of patients who are so far advanced in dementia as to be somewhat filthy in their habits.

The ward for disturbed and dangerous patients I would leave altogether in the charge of male nurses.

It will no doubt appear to those of you who are specially interested in this subject that I have taken a moderate stand. You must bear in mind, however, that I am merely explaining my

methods of introducing female nursing in men's wards. I am quite sure that I will desire to proceed further in the same direction when I reach the end of my present programme. The experience acquired during this time and the band of trained nurses I will have gathered together will make further progress much easier. No matter how desirable the change may appear to me I cannot help realizing the necessity of making progress slowly. I believe if those in charge of hospitals for the insane would begin the work with confidence and carry it out with great patience success would surely follow in every case. If we try to effect the change suddenly we are simply courting disaster. Accidents will happen as a result of being obliged to employ unsuitable and untrained material to carry on the work. The whole system must grow up gradually. If these ideas are kept before you I venture to hope that before many years the number of women nurses in charge of male patients will have materially increased and patients suffering from insanity will receive in a larger degree the careful nursing, sympathetic kindness and general supervision that their unfortunate condition demands.

# THE VALUE OF STAFF CONFERENCES IN STATE HOSPITALS.

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Staff conferences, essentially medical in character, have been in operation in the various State hospitals of New York State since the year 1905, as required by law.

The introduction and adoption of newer methods of clinical study, shortly before this period, clearly emphasized the need of more uniform and concerted action on the part of hospital staffs with reference to the study of the mental and physical condition of those admitted for care and treatment.

Previously, some of the hospitals had, for some time, held more or less regular meetings, but they were pre-eminently for administrative purposes.

Staff meetings, fortunately for all concerned, have now become medical clearing houses, and have been of value in proportion to the interest manifested by the individuals taking part in the work. Cases have become common property and experience consequently widened.

The former methods, whereby, largely through heresy, or on account of unusual interest, only a few came before the staff, have been corrected as far as possible.

There are obvious reasons why the entire staff should share in the results of every examination that has been made by another. Clinical work is better for having been scrutinized and passed upon in a formal way rather than casually brought to notice.

The facts of the history, the mental and physical findings and the patient are presented. All are considered with the view of giving full value to the diagnostic points.

The impressions thus made are less likely to lose their force or fail to be of help in the study and observation of future cases. It is not to be forgotten that purely physical questions should receive their share of attention in relation to psychoses.

Criticism under the proper conditions is also a valuable feature in bringing out points of interest that may have been overlooked. The best policy, as to the treatment of a case, is known to all. The impression gained by the patient, that the entire staff is interested in his behalf, aids materially in gaining the good will and confidence of the subject. The various services in institutions become less individualized and apart. They are rather made to contribute whatever may be of medical interest to the general fund, and those in charge draw their experiences from sources broader than formerly, for each member of the staff is continually assigned new cases for study and presentation.

A properly organized staff conference is a step forward in hospital organization, and when it is fully inaugurated there seems to be no good excuse for substituting the time thus spent for other methods of instruction.

Uniform methods of examination with definite times set apart for the mutual consideration, as far as possible, of medical questions, cannot be considered as impracticable, either because too much time may be required or because of fear that other matters of routine will be neglected. The arguments against this procedure can best be made only after a fair trial.

It is probably true that no State hospital staff is so busy that it cannot set apart some portion of time for conference upon strictly medical matters.

The sole object of this paper is to briefly point out some of the elements of value in staff conferences, based upon the assumption that all obstacles for their prosecution have been successfully removed. Therefore, one's description will be largely from personal experience in a hospital where daily conferences are the rule.

In organizing the medical program for such meetings, it should be the duty of the one in charge of the clinical department to assign cases to other members of the staff as soon as they are admitted, and so arrange the work that it be as equally divided as possible. This duty rather naturally falls to the first assistant physician, as he usually has general oversight of the recent admissions and of all clinical matters generally.

In institutions where the annual admissions are not over 400, and the ratio of physicians to the general population is about one

to 170, all the cases can, upon entry, be fully examined and presented a sufficient number of times before their discharge if daily conferences are held. Many of the larger hospitals of this State, however, have admission services so active that even daily conferences could not properly dispose of all the cases. The practical advantages gained by the presentation of as many cases as possible, nevertheless, holds good.

In the selection of cases to be presented, enough material should be provided to completely occupy at least one hour.

It has been found feasible to present all cases under three different conditions. First, within five days after admission. Second, when the case is completely worked up, usually within six weeks. Third, before discharge.

The advantages of the first presentation are of some importance. In New York State there is a statutory regulation that requires the superintendents of hospitals to see all patients within five days after admission, and thereby this requirement is conveniently observed, as the superintendent is naturally the presiding officer during the clinical hour.

At this period, more attention is paid to the points of history than to making a diagnosis, and in addition, to primarily determine whether the patient is a proper subject for detention in the institution. Therefore, the attendant, whose trained duty it was to obtain from the relatives or otherwise as full a history as possible before bringing the patient to the hospital, is also required to be present before the staff in order that the errors of history may be corrected, doubtful points inquired into and fuller descriptions of certain events obtained.[1] In this way, there is often gained additional information of value, the mental level of the relatives and home conditions are better understood, and the history, when recorded, is in better form.

This method of scrutiny of the attendant's report has its obvious advantages and tends to make him more accurate in his inquiries.

Those hospitals, which draw their patients from large rural

[1] The New York State hospitals send, upon notification, trained attendants to the homes of patients, for whom admission has been sought, to convey such patients to the hospital.

sections, depend greatly upon the thoroughness of the attendant's account. The opportunities for personally interviewing the relatives are not as frequent as in compact city districts.

For the sake of a better understanding of the cases, carefully framed letters of inquiry to the relatives or to the family physician of the patient are sometimes necessary, should the attendant for one reason or another fail to gather satisfactory information.

At this presentation, it is not advisable to attempt to examine the patient to any extent, but rather to tactfully explain to him the reasons for his detention and generally to give him the impression, as far as possible, that full consideration will be given his condition. For this manifestation many patients are grateful and others are disposed to be more free in their attitude and conversation when the mental status is seriously sought by the examiner. It rarely does harm.

Incidentally, however, observations at this time are recorded as to the reactions of the patient since entry. The examiner briefly reports whatever points of interest he may have had time to obtain, particularly as to the physical condition, the immediate therapeutic indications and the more important mental features, such as the orientation, evidences of hallucinosis, the character of the productivity or any other features which can be readily demonstrated without taking too much time.

A brief, general survey of the patient, as soon as possible after admission, is of clinical advantage to all and enhances the subsequent impression gained when the case is again presented in a more complete form for diagnosis. Furthermore, this method leaves the records of those who suddenly die, or are removed, in better order. Some things of value may have been noted which would, otherwise, have been missed.

There are, in the course of admissions, some cases which can be properly worked up and disposed of, as far as the physical and mental conclusions are concerned, within the five days. These are principally cases of well-recognized deteriorations, such as the senile and epileptic, and occasionally cases of well-marked general paralysis. But the conclusions, however, should not be accepted until they are apparent to all, and it is not to be forgotten that in these cases interesting conditions subsequently

arise for further study such as neurological or other organic manifestations.

Relatively few patients are in such condition that they cannot be presented before the staff. Those that cannot are so because of some serious physical disorder or, rarely, because of extreme sensitiveness, such a state as we might readily infer in the case of a refined woman, depressed and fatigued upon entry.

The second presentation of the case is made only after the examiner has, as fully as possible, completed his examination. Six weeks are sufficiently long in which to gather and put in typewritten order what is obtained. For the sake of clearness a summary of the findings is submitted rather than the whole case in order to cover in succinct and comprehensive form the principal features of the case. The complete examination can, at any time, be referred to whenever more detail is required concerning some particular point.

It seems not wise to defer longer in hopes of adding anything materially helpful for diagnostic purposes, even if inaccessibility is the stumbling block. There will be a small percentage of cases that cannot be satisfactorily classified even at a more remote period, but enforced postponements for this reason should not deter energetic and painstaking efforts to come to early and fairly sound conclusions in those cases in which the symptoms are demonstrable.

It would add nothing to the value of a case of general paralysis to wait for positive evidences of memory faults before giving the disease a diagnostic name. The exhibition would be of more interest before this stage. The habit of waiting too long before making a diagnosis robs the case of its freshness and interest for others. The salient points become historical rather than clinical and the examiner substitutes convenience for expediency.

It is decidedly more interesting for the staff to witness retardation rather than to take another's word for it. A manic case is more instructive when he can be readily shown to be so. The mood, attitude and manner of the hallucinated person mean more when observed early. A case should be shown when it is worth while if clinical material is to be the means of sharpening our knowledge and rendering us more resourceful.

After the record is presented and the patient properly interviewed and dismissed, discussions are then in order. Herein rests much of the further value of a staff conference. The one who presented the case has been mindful of this when summarizing the record and arranging his diagnostic points. The contentions and arguments incident to such discussions should be pertinent and not allowed to become too miscellaneous or unprofitable.

In the main, the following questions are up for consideration, namely: What is your impression of the case? Do you agree in the conclusions that have been drawn? What features do you see that are unusual or that differ from those manifested in former cases of the same type? Have the therapeutic indications been met? What factors influence the prognosis?

In this way the case is not simply disposed of by merely giving it some diagnostic name. This characterization can be best reserved till the last. The more important consideration is whether we have understood the individual case, and of what use can it be in practical work.

A record of such a presentation should be made by the examiner covering the important features elicited from the patient and the opinions expressed by the various members of the staff. By this means, aid is given in the subsequent observation of the patient in whatever service he may be.

There are occasionally good reasons for again presenting the case to show some unusual mental or physical conditions that may have arisen or because of some obscurity regarding previous symptoms.

The final presentation of a patient is made when his discharge comes up for consideration. This usually takes but little time particularly if the case has recovered. Under any conditions it is well to know as far as possible the exact mental attitude of those who are to leave our charge. A brief review of the main points of the case, together with the course of psychosis, is submitted, and the welfare of the patient, as well as the interests of the community from which he came, are determined by what is found. If the patient is well, some profit accrues from learning under what circumstances and by what method he was able to

readjust himself. What may constitute insight is a feature peculiar to each case.

Lastly, it seems advisable to set apart some portion of an hour during the week for the consideration of any autopsies that may have been held. The findings are considered in relation to the clinical notes. The extent of the continued observation and interest in the cases, which have been more or less disposed of, are hereby measured. The accuracy of the diagnosis of intercurrent physical disorders and of the terminal disease are here put to the test, and oversights become matters for explanation.

It is probable that in the past the necropsy has been put too much apart by itself, and has not been considered in close enough relationship to conditions found existing during life. Autopsy material manifestly belongs to the clinician. It is his case even after death and no autopsy should be conducted unless the examiner is there with the record of the case. Furthermore, the pathologist is thereby better guided in his immediate investigations.

In some such way, as briefly outlined, can the hour given to consultation be made profitable. It is this kind of schooling that will be likely to help the staff to keep pace with the present day requirements of practical psychiatry.

Matters of medical import are brought into better line with something definite in view, namely: Accuracy of observation, correction of wrong impressions and construction of permanent records, which contain more complete and orderly data for future help. In addition good opportunities exist for subjecting to practical test whatever may be found in general literature and mere book knowledge takes its proper level.

Daily conferences give the superintendent a greater personal knowledge of the general medical activity of his staff and he is in a better position to measure the value of each individual.

## DISCUSSION.

Dr. Southard.—I would like to say a word about the economy of this conference system, because lately I have been enjoying the fruits of the daily staff conference at Danvers Hospital in a review of autopsy findings in cases that have been through the daily clinics. I wrote to Dr. Cowles, formerly of McLean Hospital, to learn if he had any data relating to the

time at which this system was adopted and he has written me a letter concerning the development attained at the McLean Hospital. He assigned the origin of such conferences originally to Germany to Prof. Ranke, who held a seminary for the discussion of historical matters by his pupils. That system has, of course, now spread into a number of our universities.

In 1889, if I remember the date, the conferences were introduced at McLean. These conferences largely had the aspect of meetings at which special topics were considered and occasionally an introduction of patients. And then came in a number of hospitals in Massachusetts and elsewhere the occasional conference, perhaps a weekly conference.

Dr. Page introduced the daily clinic in Middletown, Conn., during the latter years of the last decade of the nineteenth century, and if I remember aright it was in 1899. At the Danvers Hospital, in Massachusetts, it was begun and accurately recorded, in 1903. We now have complete records for five years there. During that time a large number of cases have gone through the clinic and two hundred and forty-seven of them have come to autopsy. I have been reporting this year some data concerning the accuracy of diagnosis of certain diseases which I think bear upon medico-legal and other questions. At the New York meeting of the American Neurological Association, I showed that on the basis of diagnosis in these clinics, the probable accuracy of diagnosis of the disease general paresis was 85 per cent, or if cases of tabes complicating mental disease were excluded—these would perhaps not be termed errors of diagnosis—then the probable error of diagnosis was one in ten.

The importance of these particular determinations of diagnostic accuracy lies in the fact that the diagnoses were made by several men. There was no induced uniformity of diagnosis due to autocratic methods, which must be in vogue in a certain degree in psychiatric institutions in the old world, but in our institutions we have the advantage of controversies among the assistant physicians. The Danvers daily clinics are very likely to bring out disagreements. Several members of this Association have been at times on the staff, and they are not all tempted to agree if there is any chance to disagree on the diagnosis.

This shows that the development of the daily clinics has turned from the autocratic German, or one-man system, over to the republican system of considering the diagnosis. That goes hand in hand with the method introduced (by Dr. Page) of giving cases in rotation to the different members of the staff so that even the younger members of the staff shall take the responsibility of diagnosis, I will venture to say, basing my ideas upon these results, that it is probably better so to introduce a feeling of responsibility in the younger men than to gain a somewhat greater accuracy of diagnosis by leaving all the cases in the hands of some clinical director, first assistant or other autocratic person.

The exact recording of these diagnoses at a time long *prior to the making up of the annual report,* and without specific relation thereto is important, and the fact that the diagnosis is set down in this way *before the*

*autopsy* is another feature which makes results of importance in comparison with the results in an out-patient clinic.

I said that the accuracy of diagnosis in general paresis was nine out of ten; that is to say, out of ten cases in which medical persons, or at least medical men of the average Danvers men, made the diagnosis, there would be one of the ten which would not turn out at autopsy to be a case of general paresis.

When we come to senile dementia, as I hope to show later in this session, the successes in diagnosis were seven out of ten, at least taking the criteria of the books. I believe that by this correlating of autopsy findings with these republican diagnoses by the various members of the staff, we shall be able to improve our diagnostic ability.

# AN ANATOMICAL ANALYSIS OF SEVENTY CASES OF SENILE DEMENTIA.

By C. G. McGAFFIN, M. D., Taunton, Mass.

The following analysis of the Taunton State Hospital autopsies on cases of senile dementia or cases so diagnosed by members of the staff of that hospital, was conducted independently of Dr. Southard's analysis of the Danvers State Hospital material, and subsequent to it, to discover whether the Taunton material, diagnosed by a different staff, would contain a similar grouping of conditions.

Clinics have been held similarly to the Danvers method, already described, but not all of these cases here considered have been passed upon by the whole or a majority of the staff, but by the superintendent and one assistant physician. Many, however, were presented at the staff meetings, and all the data that could be secured from that source have been used.

From the opening of the Taunton laboratory in May, 1898, to the first of January, 1909, 328 autopsies have been made. On 75 of these a diagnosis of senile dementia was made, or 23 per cent.

This high percentage is not unusual, and a similar one is to be found in the records of nearly every insane hospital and asylum in the country.

In five of these cases the head was not opened, leaving 70 cases as the basis for this report.

For many years it has been thought by psychiatrists that senile dementia was rather a "dumping ground" into which to cast many heterogeneous cases arising after the sixtieth year of life and showing symptoms, one or some of which might fall into the group of symptoms usually characterizing this psychosis. Too little attention was paid to arteriosclerosis of the brain as an entity, and it was held that such atheromatous change and senile dementia were identical and the one affecting the brain necessarily entailed a diagnosis of the other; also organic brain disease was too often overlooked.

Needless to say, much of this doubt and obscurity has been cleared away in the past few years, but five to ten years ago this was not the case, and the diagnoses made up to 1904 are probably much garbled by this old idea.

Noetzli, in an analysis of 70 cases of senile dementia, said that atheroma of the cerebral blood-vessels was the fundamental cause of senile dementia, and that the atrophy of the brain came as a result of this atheroma; also that the frontal lobes were not more atrophic than other portions of the cortex. Some of the figures obtained by this analysis do not seem to coincide with those ideas.

Of the 70 cases considered in this paper, in eight there was some doubt expressed by some members of the staff as to the diagnosis; and these are set one side, leaving 62 clinically uncomplicated senile dements. In 56 cases some note was made regarding macroscopic atrophy of the brain and of this number 26 showed a more marked atrophy of the frontal convolutions than in other parts of the cortex, or 46 per cent, and in only five cases was general atrophy observed.

This would seem to point to the conclusion that the frontal convolutions are attacked first or that they withstand the atrophic process least well. Again the higher centers of thought, judgment and reasoning are the points hit first and hardest.

General atrophy is not common and the usual procedure is for certain parts of the cortex to be picked out for local atrophy. General atrophy in itself would point toward a condition of idiocy, but it would be difficult for anyone to call senile dements idiots.

Focal or local atrophy then is the usual finding with the frontal convolutions the focus of location.

In 44 cases of the original 62 the brain weight was given and of these 27 were males and 17 females. In handling these figures of weight the accepted averages have been used: 1358 gm. for male brains, and 1235 gm. for females.

Of the 27 male brain weights 17 showed to be below the average, or 63 per cent. Of the 17 female brain weights, on the other hand, 14 were below 1235 gm., or 82 per cent.

Of the whole number, seven showed a loss of one-sixth in weight and may be considered truly atrophic; of these two were males and five females. Of these seven atrophic brains by microscopic examination, six showed distinct loss of cells in the layers

of the cortex, especially the outer layer, and a general thinning of the cortical mantle.

From these figures it would seem that the female brain tends to lose in weight under the action of senile changes more commonly than males and that the loss is greater. The female brain is normally 123 gm. lighter than the male, and so the loss is correspondingly even greater in extent.

From the clinical records the duration of the psychoses and the age at death has been studied, in those cases whose brains at autopsy showed some loss of weight, and the averages obtained.

In the 17 males, the average duration of the disease was four years, eight months and six days, and the age at death 75.

In the 14 females, the duration was four years, one month and 13 days, and the age at death 79 and six-fourteenths.

The figures here for the duration do not exactly coincide with those given by Southard and Mitchell last year, but that is not surprising as they were not considering senile dementia, but in relation to the average age there is a striking similarity.

The age at onset in these cases is interesting, as it will be seen that the males showed senile deterioration about four years before the females. Perhaps that is a direct result of the more strenuous life men are supposed to lead and that they are more prone to arterial changes for the same reason, but these men had enough vitality to prolong their hospital existence seven months and 23 days longer than the women.

Was it because they could take care of themselves better among the other patients than the women? Do our male attendants excel the female in efficiency? or, Was it the added four years to their lives that made the women the easier prey of terminal disease?

With regards to arteriosclerosis, in 11 cases it could be fairly considered from the macroscopic description that there was sclerosis of the cerebral end arteries. Spots of focal softening mentioned in the protocols were considered as sufficient evidence, macroscopically and microscopically these deductions have been found to be reliable in nearly every case.

Case I.—202, M. McK., female (12,166). Patient was admitted from Boston, April 27, 1894, aged 73, very deaf and answers questions irrelevantly, wanders about the ward at night, irritable, noisy and extremely

jealous of other patients, filthy in habits, developed a large crop of boils in November, 1898, grew steadily weaker and died December 16, 1898.

*Autopsy Report.*—Heart flabby, mitral valve thickened, many pleuritic adhesions and right lung showed edema and congestion, capsule of kidney firmly adherent, on section kidney cortex very thin, dura much thickened, pia milky, parietal lobes softened, arterial walls at the base showed numerous yellow patches, all vessels congested, no atrophy.

*Assigned Cause of Death.*—Interstitial nephritis.

Case II.—409, M. A. R., female (11,078). Patient was admitted from Easton, March 24, 1891, aged 78, third admission, vision much impaired, radials very sclerotic, says she is surrounded by spirits who tease and torment her, very apprehensive, hallucinations of sight and hearing, had appeared to grow gradually weaker for six months and died June 9, 1899.

*Autopsy Report.*—Body much emaciated, bloody discharge from vagina and rectum, pleuritic adhesions, several hard nodules in upper lobe right lung, heart small, surface arteries calcareous and tortuous, mitral and tricuspid valves calcareous, large gray nodule in liver, multiple nodules in spleen, also in many places in intestinal wall, pancreas contained a hard mass about midway size of hen's egg and firmly attached to intestines and abdominal aorta, capsule of kidney very adherent.

*Brain.*—Surface of frontal and temporal lobes extremely soft and crumbles, arteries of base marked by calcareous plaques, no atrophy.

*Assigned Cause of Death.*—Carcinoma of pancreas.

Case III.—860, G. P. P., male (14,537).—Patient was admitted from Duxbury, April 6, 1900, aged 77, very feeble and emaciated, second heart sound very indistinct, pulse too rapid and irregular to count. Has been insane seven or eight years, hallucinations, illusions and delusions. On admission was very filthy and could not answer simplest questions, offered feeble resistance to any care or attention, died April 13, 1900.

*Autopsy Report.*—Dura strongly adherent to calvarium, when dura was opened four ounces of fluid blood with many clots poured out. The left internal capsule presented an irregular-shaped area of degeneration, grayish-white in color and of jelly-like consistency, vessels of base thickened and dotted with grayish-white spots, no atrophy. Other organs not examined.

*Assigned Cause of Death.*—Cerebral hemorrhage (sub-dural).

Case IV.—1061, R. B., female (14,711). Patient was admitted September 1, 1900, from Chelsea, aged 92.

*Physical Examination.*—Almost bald, arcus senilis well marked, skin harsh and leathery, only four teeth remain, vesicular murmurs roughened over all areas of chest, urine normal, vision very poor, tongue tremulous, gait very uncertain.

*Mental Examination.*—Memory poor for recent and remote events, disoriented as to time, incoherent and rambling in conversation, appetite poor and patient is very feeble, spends a part of each day in bed, grew weaker gradually and died February 23, 1901.

*Autopsy Report.*—Mitral valve calcareous, also in tricuspid, aorta calcareous, slight passive congestion of lungs, arteries of lungs show atheromatous change, liver atrophic and capsule much thickened, capsule of kidney strips with difficulty having granular surface, few small cysts on surface. Dura thickened but not adherent, vessels at base sclerotic as are all smaller arteries, in first right temporal convolution there is a considerable spot of yellow softening, the tip of the occipital lobe is also softened and slight general atrophy.

*Assigned Cause of Death.*—Senility.

Case V.—1116, H. E. R., female (15,248). Patient was admitted November 26, 1901, aged 78.

*Physical Examination.*—Hair gray and short, arcus senilis present, skin harsh and dry. Heart and lungs not examined owing to lack of co-operation, urine not remarkable, teeth much decayed and scattered, tongue tremulous and deviates to right of median line.

*Mental Examination.*—Entirely disoriented, says she is 30 years old, cries to go home to her parents, no memory for recent and remote events, quiet but restless, very untidy in dress and personal habits. In February, 1902, suffered from profuse serous diarrhea and died February 17, 1902.

*Autopsy Report.*—Recent slight adhesions between stomach and liver, many small hemorrhagic spots on mucous membrane of stomach, mucous membrane small, intestine covered with dirty gray mucous, liver cut surface greasy, capsule of kidney strips with difficulty leaving granular surface, many pleuritic adhesions, some thickening of mitral valve, others competent, aorta shows some thickening, edematous softening in parietal and frontal regions, pia strips easily, olfactory tract atrophied, vessels at base show occasional patch of hardening.

*Assigned Cause of Death.*—Gastro-enteritis and senile dementia.

Case VI.—1210, G. C., male (15,790). Patient was admitted on January 21, 1903, from Bridgewater, aged 70.

*Physical Examination.*—Poorly nourished, arcus senilis, subject to dizzy spells, teeth nearly all missing, skin rough and dry, gait unsteady, second aortic sound accentuated, radials sclerotic, lungs shows some moist râles over apex, right; reducible inguinal hernia on left side, urine not remarkable.

*Mental Examination.*—Much confused, goes about pounding on the doors, disoriented, no insight, memory deficient, general health gradually failing, died May 7, 1903.

*Autopsy Report.*—Pleuritic adhesions, some excess of fluid in pericardial sac, coronaries sclerotic, aorta shows sclerosis, calcareous deposits and

ulceration; a veil of pus over intestines (Gram-negative bacillus shown); capsule of kidney adherent.

*Brain.*—Tissue very soft, surface of convolutions roughened and has granular appearance, pia vessels show spots of thickening, vessels at base very sclerotic, slight frontal atrophy.

*Assigned Cause of Death.*—Peritonitis and senile dementia.

Case VII.—1350, P. W., male (16,602). Patient was admitted October 18, 1904, from Fall River, aged 70.

*Physical Examination.*—Very feeble, skin thin and dry, marked arcus senilis, incontinence of urine, breath sounds roughened, loud systolic murmur replacing second sound of heart, arteries much thickened, very deaf.

*Mental Examination.*—Quiet but restless, clouding of consciousness, blind agitation, disoriented, very restless at night and sleeps very poorly. November 1, 1904, showed rise in temperature, rapid breathing and there were spots of dullness over lungs, died November 3, 1904.

*Autopsy Report.*—Body well nourished, slight aortic sclerosis, lower lobes of both lungs show hepatized areas with pus points on section, many stones in gall bladder, cyst on surface of right kidney, fatty degeneration in left kidney. Dura strongly adherent externally and internally, pia is milky, middle meningeal artery shows many white patches, area of softening in left hemisphere posterior to postcentral convolution, no other areas of softening, no atrophy.

*Assigned Cause of Death.*—Broncho-pneumonia.

Case VIII.—1363, B. B. S., female (15,720). Patient was admitted November 29, 1902, from Taunton, aged 85.

*Physical Examination.*—Much emaciated, arcus senilis, skin rough and dry, gait feeble and unsteady, murmur heard at apex at beginning of second sound, teeth entirely missing.

*Mental Examination.*—Quiet, entirely disoriented, untidy, memory equally poor for recent and remote events, very irritable, suffered from multiple abscesses in neck in the summer of 1903 which healed, dysentery in July, 1905, from which patient died July 19, 1905.

*Autopsy Report.*—Spleen strongly adherent to surrounding tissues, liver shows increase of connective tissue, capsule of kidney strips with difficulty and leaves granular surface, heart enlarged, mitral valves show calcareous patches, aorta calcareous, pusy mucous in the bronchi, dura adherent in frontal region, large vessels at base show calcareous patches and small vessels more uniform thickening, in the first convolutions of right frontal a patch of yellow softening size of dime, no other degenerations, general cerebral atrophy.

*Assigned Cause of Death.*—Arteriosclerosis and senile dementia.

Case IX.—1318, M. L., female (15,185). Patient was admitted October 10, 1908, from Fall River, aged 80.

*Physical Examination.*—Very feeble, hair gray and scanty, arcus senilis,

ankylosis of knees, heart's action very feeble, appetite poor, toothless, skin dry and loose.

*Mental Examination.*—Quiet, but keeps up a constant muttering in French, disoriented, does not know her age, confined to bed, takes little nourishment, died April 19, 1904.

*Autopsy Report.*—Mammary glands atrophied, abdominal aorta much sclerosed and calcareous, small cysts on surface of kidneys, pleuritic adhesions, pus points on section of left lung, many pericardial adhesions, tricuspid valve thickened, mitral and aortic valves calcareous.

*Brain.*—Much softened all over cortex, vessels at base present much atheroma, slight general cerebral atrophy.

*Assigned Cause of Death.*—Arteriosclerosis and senile dementia.

Case X.—1561, J. W., female (17,156). Patient was admitted January 10, 1906, from Edgartown, aged 75.

*Physical Examination.*—Very feeble, skin harsh and dry, prolonged rasping murmur replacing first sound of heart, circulation poor, some arterial hardening, gait feeble, tremor of tongue and extended fingers.

*Mental Examination.*—Quiet, but restless especially at night, memory defective for recent events, orientation imperfect, delusions of a persecutory nature, irritable, pseudo-reminiscences, suffered from a shock on morning of January 21, 1907, and died January 22, 1907.

*Autopsy Report.*—Mitral valves much thickened, coronaries sclerosed, lungs negative, strong adhesions throughout abdomen, capsule of kidney strips with difficulty leaving rough surface, numerous cysts just beneath capsule.

Cerebral vessels show marked sclerosis, fresh hemorrhage in right occipital lobe, atrophic patches around the vessels in both hemispheres, slight frontal atrophy.

*Assigned Cause of Death.*—Cerebral hemorrhage and valvular heart disease.

Case XI.—1407, T. H. T., male (16,504). Patient was admitted August 8, 1904, from New Bedford.

*Physical Examination.*—Feeble old man, face asymmetrical, small inguinal hernia, urine normal, lungs negative, soft blowing systolic murmurs heard at apex, arteries somewhat hardened, gait tremulous and unsteady, hands too tremulous to write.

*Mental Examination.*—Quiet, but restless, constantly arranging his bed clothes, much confused, motor restlessness, disoriented, no change in mental condition, but a gradual physical weakening resulted in death May 7, 1905.

*Autopsy Report.*—Sacral decubitus, tricuspid valve thickened, also mitral; aorta sclerotic, pleuritic adhesions and streptococcus exudate covering lower lobe left lung, which on section shows much congestion, smears from

the exudate in bronchioles of right lung show pneumococci. Many peritoneal adhesions, slight increase of fibrous tissue in liver, numerous small cysts on surface of both kidneys.

*Head.*—Grooves for meningeal vessels well marked, dura thickened and adherent externally, brain tissue is fairly soft, a very large cyst in the left choroid plexus; no atrophy.

*Assigned Cause of Death.*—Lobar pneumonia.

Basal sclerosis was noted in 30 cases and probably that is a small percentage if the microscopic pictures could have been obtained, but that was impossible. In most instances, however, a distinct note was made to the effect that the sclerosis was confined to the large basal vessels and did not penetrate into the brain substance. Four of the 44 brain weights showed distinct loss in weight without any cerebral or basal sclerosis being noted macroscopically, and in only one case of these four did the microscope reveal any thickening of the vessel walls and that was very slight.

Eleven cases showed distinct atheromatous change, no atrophy of the cortex was noted and the brain weights were above the average or only slightly below it.

Six brains macroscopically showed no arteriosclerosis and no atrophy. Of this number one showed a slight thickening of the cortical vessels under the microscope and one distinct cell infiltration around the vessels with the presence of plasma cells, so this case can probably be thrown out altogether.

## Conclusions.

I. That the frontal convolutions undergo the most atrophy and that general atrophy is uncommon.

II. That the female brain loses more often in weight and that the loss is greater.

III. That men are attacked by the disease much earlier than women, but live somewhat longer after it is established.

IV. That atrophy does not go hand-in-hand with atheromatous change.

V. That some cases with symptoms pointing to senile dementia show neither arteriosclerosis nor atrophy at autopsy.

## DISCUSSION.

Dr. Kirby.—A very interesting and instructive line of investigation has certainly been initiated by Dr. Southard and Dr. McGaffin. There is one point I would like to make inquiry about. Neither of the readers have stated just what they considered necessary to speak of atrophic condition; whether their statements are based merely on the gross appearance of the convolutions, or whether it also includes pigmental degeneration.

I think also to speak as if we had a definite standard for consideration of atrophy is perhaps not very well substantiated and no statement, it appears to me, can be made without taking into consideration the body weight of the patient and also the skull capacity.

Dr. McGaffin.—In regard to the question of Dr. Kirby: In the beginning of this work we thought to show atrophy of the brain in regard to the brain weights, and in this relation that we would consider a brain atrophic if the loss of weight was one-sixth or more of the averages which have been generally accepted as normal brains. We took other considerations in conjunction with this loss in weight which we thought would point to a condition of true atrophy, such as narrowing of the convolutions and the consequent flaring of the sulci. Microscopically we have not gone into detail as much as we might, but we hope to consider the subject more fully later.

# ANATOMICAL FINDINGS IN SENILE DEMENTIA: A DIAGNOSTIC STUDY BEARING ESPECIALLY ON THE GROUP OF CEREBRAL ATROPHIES.

By E. E. SOUTHARD, M. D.

*(From the Laboratory of the Danvers State Hospital, Hathorne, Massachusetts; and the Department of Neuropathology, Harvard Medical School.)*

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I have lately possessed the unusual advantage of reviewing a considerable collection of autopsies (247) upon cases of mental disease introduced at various times in the years 1904-1908 at the daily clinics of the Danvers State Hospital, Massachusetts. The cases introduced in these clinics are of particular value, because the often divergent opinions of several diagnosticians, from three to eight or more, are recorded in each instance. The staff has varied from time to time, but has at all times contained members familiar in our recent American psychiatric literature, such as Prof. A. M. Barrett (now of Ann Arbor), Dr. H. A. Cotton (now of Trenton, New Jersey), Dr. H. W. Mitchell (now of the Eastern Maine Hospital for the Insane), Dr. H. M. Swift, and Dr. Charles Ricksher, as well as the moderator, Superintendent Charles W. Page. The clinical diagnoses which I have considered have not been those chosen for the statistical records required for the Board of Insanity, but *all* the diagnoses rendered for each case.

For more minute examination I have naturally resorted to those cases in which all the staff agreed, holding the opinion that uniformity in diagnosis by several men is of more value than that induced by a single chief of clinic.

To establish the degree of accuracy in diagnosis at these clinics, I may mention (what I have dealt with more specifically before the American Neurological Association) the 85 per cent accurate diagnoses where all agreed to general paresis. Only 6 out of 41 cases *unanimously* diagnosed general paresis turned out to be cases of

something else. The reasons for these 6 incorrect diagnoses I shall present *in extenso* elsewhere,[1] but they do not militate against the general accuracy of diagnosis in the Danvers daily clinics.

I was the more astonished to find that, on accepted anatomical criteria, our success in the diagnosis of senile dementia at these clinics was not at all comparable with our surprisingly good results in general paresis. On the hypothesis that cerebral atrophy is a necessary feature in senile dementia, our diagnoses turned out to be only 38 per cent correct. On the hypothesis that cortical arteriosclerosis is a necessary feature in senile dementia, our diagnoses were but 48 per cent correct. And, in fact, 14 of the 42 cases in which the diagnosis of uncomplicated senile dementia was rendered, viz., 33 per cent, proved to show neither sclerosis of terminal arteries nor cerebral atrophy, so that *our general percentage of accuracy, as established by the finding of either cerebral atrophy or cortical arteriosclerosis (or both), was 66 per cent for senile dementia.*

The general analysis of this material may be presented in the following table, which deals with the data of 42 uncomplicated cases in a total of 71 cases of probable senile dementia in a grand total of 247 cases of various types of mental disease subject to anatomical review:

DIAGNOSIS OF SENILE DEMENTIA.

| | | |
|---|---|---|
| Clinically uncomplicated | | 42 |
| Brains underweight | | 29 |
| Males under 1358 G. | 10 | |
| Females under 1235 G. | 19 | |
| Brain atrophic | | 11 |
| At least one-sixth loss in weight. | | |
| Brains atrophic | | 16 |
| All data considered. | | |
| Sclerosis of cerebral end-arteries | | 20 |
| Atrophic, not arteriosclerotic | | 8 |
| Not atrophic, not arteriosclerotic | | 14 |

These 42 cases have been subjected to closer analysis with the object of determining the necessary features in a case of senile dementia.

It does not appear that the anatomical and histological characters of senile dementia are as clear-cut and ready of diagnosis

as the post-mortem characters of general paresis. But there is a widely current opinion that the brains of senile dements show well-marked *cerebral atrophy.* Other descriptions give equal prominence to *arteriosclerotic lesions.* Frequently the literary student gains the impression that both kinds of disease characterize the brains of senile dements, or even obtains a thinly-veiled conception that the brain atrophy is somehow due to arteriosclerosis.

## Cerebral Atrophy.

With respect to cerebral atrophy, it appears that there is actually no standard by which to determine the amount of loss in weight which shall signify atrophy. Thirteen of the brains in the 42 uncomplicated cases of senile dementia, remarkably enough, yielded weights above the averages ordinarily assigned for male (1358 grams) and female (1235) grams. Thus, unless some of these 13 cases possessed unusually large brains at the outset (of which there is no evidence otherwise), we need consider only 29 cases as belonging possibly in the cerebral atrophy group.

There is, however, no warrant for the diagnosis of cerebral atrophy in every case which is somewhat underweight with respect to the assigned averages of the books, since we must take into account initial differences in brain weight (variations according to race, body weight, stature, age). Thus brain weights ranging from 1461 to 1265 have been assigned to average normal males, and weights from 1341 to 1112 to average normal females.[2]

It is obvious, therefore, that the degree of loss which is to warrant the diagnosis "atrophy" is hard to determine. Perhaps, in the last resort, we should be dissatisfied with any result which did not depend on an obviously impossible calculation—namely, the degree of loss from the original weight in the given case.

If in this series we adopt the arbitrary standard sometimes advocated—namely, a conceived loss of one-sixth the original weight[2]—and take the ordinarily assigned averages as original weights, we at once reduce the cases showing brain atrophy to 11. Thus only 26 per cent of 42 cases diagnosed as senile dementia would show atrophic brains.

Perhaps it is better to trust the qualitative data with respect to the diagnosis, cerebral atrophy. Upon collation of the qualitative findings, paying attention to the occurrence of both diffuse and

focal atrophies of convolutions, the same result as before recorded (on the criterion of weights) was registered for the incidence of brain atrophy. There were 13 cases which could not be regarded as atrophic and 29 which showed either diffuse or focal convolutional atrophy. The distribution of these classes was almost the same as the distribution of the weight classes. Two cases were carried over from the larger class (29) to the smaller (13). (The first on the score of focal atrophy of one frontal region, the second on the score of a focal lesion (possibly aplasia) of the frontal lobes). And two cases were carried in the reverse direction from the smaller class (13) to the larger (29) on the basis of exact gross descriptions, suggesting approximate normality of convolutions.

But the atrophies which were employed to separate these two classes were not all diffuse atrophies such as we have in mind in the current definitions of senile dementia. Only 20 of these cases showed an obvious diffuse cerebral atrophy, and of these four showed a slight or a questionable atrophy. Thus, if the gross qualitative differentiæ are adopted, 16 out of 42 cases of senile dementia (or 38 per cent) showed cerebral atrophy of a convincing character.

## Cortical Arteriosclerosis.

A review of the gross and microscopic findings indicates that we cannot safely exclude cerebral arteriosclerosis of greater or less degree in any single case of this series of 42 cases. (Four cases in which no specific note was made of cerebral arteriosclerosis yield other data, gross or microscopic, from which some degree of such change can be assumed.) Similar statements probably hold good of many brains in the non-insane in advanced age.

But it is evident that there are important theoretical differences between cases which show sclerosis of the larger anastomosing arteries and those which show sclerosis of terminal arteries. Sclerosis of the terminal arteries of the brain, whether leading to infarctions or not, obviously means much more from the standpoint of the integrity of the cerebral functions. In fact it would seem difficult to exclude with certainty cases of extensive small-branch arteriosclerosis from the group of organic dementia.

Twenty out of 42 cases diagnosed senile dementia proved to

show a significant arterial disease—sclerosis of terminal cerebral arteries, leading to gross or microscopic infarctions in 16 instances. Although the other 22 of the series showed arteriosclerosis also, this sclerosis was confined to the circle of Willis or to the proximal portions of the primary branches of the circle, so that the changes were deemed of no special psychiatric importance, beyond that which may attach to sclerosis of the pipe arteries throughout the body. Although it may be scarcely justifiable to transfer these 20 cases of small-branch arteriosclerosis bodily over to the group of organic dementia, since many of the symptoms shown may have been due to quite other causes than the arteriosclerosis shown, still it is manifestly unwise to study such cases from the standpoint of a critical symptomatology under the impression that they are pure instances of senile (not organic) dementia.

### Cases Without Sclerosis of Cerebral End-Arteries.

An analysis of this residuum of 22 cases not showing significant cortical arteriosclerosis (either focal encephalomalacia or other evidence of sclerosis of terminal cerebral arteries) shows that eight belong frankly in the atrophic series, whereas 14 stand out as cases in which neither diffuse cerebral atrophy nor sclerosis of terminal cerebral arteries can be ascribed to the brains.

Should this prove an adequate analysis of the anatomy of these cases, it is plain that, in the histories of the eight simple atrophic cases, we might find data corresponding to our conception of senile dementia (providing cerebral atrophy is a necessary feature of this disease). And in the histories of the outstanding 14 we might expect a variety of data in which the characteristic features of senile dementia are lacking.

That somewhat similar results might be expected in a large series of cases, at least in so far as the exclusion of arteriosclerotic cases as "organic" is concerned, is seen from the following table compiled from writers, mentioned again below:

Focal Lesions in "Senile Dementia."

| | | | |
|---|---|---|---|
| Nötzli, 1895 | 19 | 13 | 32 |
| Meyer, 1896 | 11 | 13 | 24 |
| Appeldorn, 1908 | 18 | 14 | 32 |
| Southard, 1910 | 20 | 22 | 42 |
| | 68 | 62 | 130 |

## Cases of Cerebral Atrophy.

The following pages are devoted to brief clinical summaries of the eight supposedly pure brain atrophy cases, together with the main anatomical diagnoses in each case.

The special features of the different brains are discussed together on a later page.

Case I.—D. I. H., 11801, Path. Lab. 872. Woman, born 1823. *Heredity:* Father and two brothers died of senile dementia. Mother died of asthma. *Personal history*: Normal in girlhood. Taught school. Married 1843; 9 children (four living in 1904); one miscarriage. Of a melancholy turn. Delirious during a fever, 1874. Fractured thigh, 1897, after which came mental change; amnesia, fabrications, apathy. Cut up clothes. Numerous dreams. Fearful, often said she was dying.

Committed to D. I. H., 1904. Emaciation, anemia, senile skin, teeth absent, feet blue, muscles flabby and weak, arcus senilis. Double cataract, blind, pupils non-reactive, somewhat deaf, tongue and face muscles finely tremulous, too weak to walk or stand, slight paraphasia (?), cannot write, radials and brachials thick and tortuous, pulse thready, irregular, and faint (90 to 100), organic reflexes altered.

Disorientation for time, place, and persons. Amnesia for recent and remote events. Impressibility poor. Multiplies as far as 3 x 5, and adds 2 and 2, but does no further tests. Resistive, restless.

Death 15 days after admission.

The autopsy showed *chronic conditions:*

- Malnutrition.
- Marked general arteriosclerosis, with calcification and ulceration of aorta, extensive coronary sclerosis, and moderate involvement of bases cerebral arteries.
- Bilateral generalized pleural adhesions.
- Scar of right apex.
- Chronic diffuse nephritis.
- Brown atrophy of heart muscle.
- Slight chronic passive congestion of liver.
- Slight chronic localized peritonitis (omental).
- Diffuse cerebral atrophy.

And much evidence of *acute disease:*

- Acute sphenoidal, ethmoidal, and occipital sinusitis.
- Bilateral bronchopneumonia, with acute bronchitis and tracheitis (without lymphnoditis).
- Edema of left side of rima glottidis.

Lung cultures yielded staphylococci, streptococci, pneumococci, and a bacillus of the pseudodiphtheria group.

Culture from the ethmoidal sinus yielded S. p. aureus, but culture from sphenoidal sinus remained sterile.

The *cause of death* was undoubtedly bronchopneumonia.

Case II.—D. I. H., 11716, Path. Lab. 849. Woman, born 1818. *Heredity* and much of *personal history* unknown. Onset said to be in 1900 after a fall. (Gall-stones and chronic fibrous peritonitis at autopsy.) Widow.

Committed to D. I. H., 1904. Malnutrition, senile skin, arcus senilis, teeth absent, musculature poor, right eye blind, right pupil fails to react to direct light, hearing somewhat defective, left knee-jerk, elbow and forearm reflexes exaggerated, tremor of tongue, labial tremor when talking, right leg weaker than left and kept flexed, incoordination in movements of feet, muscular sense in legs diminished, radials and brachials thickened and tortuous, pulse full, regular, 96.

Excited and resistive on admission. Disorientation for time, place, and persons. General amnesia. Fabricates (assigning wrong names).

The autopsy showed *chronic conditions:*

Obesity.
Aortic sclerosis with ulceration.
Mitral sclerosis.
(Coronary arteries normal.)
Diffuse and focal sclerosis of basal cerebral vessels.
Chronic fibrous endocarditis.
Chronic adhesive pleuritis, left.
Calcified and caseous nodule in central part of left lower lobe.
Scar of right apex.
Chronic nodular perisplenitis.
Cholelithiasis.
Moderate chronic passive congestion of liver.
Fatty liver.
Chronic diffuse nephritis.
Chronic localized peritonitis.
Chronic external adhesive pachymeningitis.
Diffuse cerebral atrophy.

*Acute conditions:*

Edema of left leg (thrombosis?, not proved).
No cultures were taken from this case and the cause of death is doubtful.

Case III.—D. I. H., 11881, Path. Lab., 1050. Woman, born 1834. Almshouse transfer to D. I. H., 1904. Nutrition and musculature fair. Senile facies and skin. Arcus senilis. Varicose veins. Teeth almost all absent. Radial arteries not palpably sclerotic. Vision and hearing impaired.

Pleasant, garrulous, Irishwoman, speaking mixture of English and Gælic. Knew month and day of week, but not the year. Repeated Lord's Prayer. Counted from 1-20, performed a few of the simplest problems. Amnesia for remote events, not so marked for recent events. Cannot write or read.

Death in 1906.

The autopsy showed *chronic conditions:*

Cardiac hypertrophy.
Coronary, splenic, and renal arteriosclerosis.

Brown atrophy of heart.
Chronic passive congestion of lungs.
Slight portal cirrhosis of liver.
Chronic diffuse nephritis.
Chronic perisplenitis.
Chronic splenitis.
*Acute conditions:*
None noted.
No cultures taken.

Case IV.—D. I. H., 12162, Path. Lab. 1058. Woman, born 1834 (assigned date). Almshouse transfer. Delusions ("holy water taken away"), suspicious, visual hallucinations (talks to supposed faces), violence at night for unknown period before transfer. Committed August 31, 1904.

Malnutrition, teeth absent, edema of feet and lower legs, weakness of muscles, gait unsteady, slight tremor of hands, rather coarse tremor of tongue, vision defective, knee-jerks and Achilles jerks diminished, wrist and triceps brisk.

Disorientation for time (except month). Amnesia complete (could, however, repeat Lord's Prayer). Later complete disorientation.

Death April 24, 1906.

The autopsy showed *chronic conditions:*
Cardiac hypertrophy.
Chronic diffuse nephritis.
Sclerosis with calcification of aortic valve.
Mitral sclerosis.
Aortic sclerosis.
Coronary, basilar, and vertebral arteriosclerosis.
Chronic fibrous endocarditis.
Chronic fibrous pericarditis.
Chronic adhesive pleuritis.
Absence of diploë.
Chronic external adhesive pachymeningitis.
Chronic fibrous leptomeningitis (notably over vermis of cerebellum).
Pedunculated polyp of cervix uteri.
Hypertrophy of right lobe of thyroid gland.
Tumor (probably hypernephroma) of right kidney.
Diffuse cerebral atrophy.
Slight granular ependymitis of accessory sinuses of fourth ventricle.
*Acute conditions:*
Lobar pneumonia, bronchitis, and fibrinous pleuritis of right upper lobe.
No cultures taken.

Case V.—D. I. H., 12334, Path. Lab. 1103. Woman, born 1835. *Heredity:* Negative. *Personal history:* Diphtheria and scarlet fever as child. Bright scholar. Married, 1856. Two boys (both alive 1904); one miscarriage. Married again, 1874. Three or four children. Widowed, 1894. Tailoress

till 1903. Corneal thickening of left eye began 1894. Gave up work on account of impaired vision. During 1904 absent-minded, gradually increasing amnesia, visual and auditory hallucinations.

Committed to D. I. H., 1904. Senile skin, slight anemia, teeth poorly preserved, muscular weakness, slight incoordination of finger movements, coarse tremor of tongue, vision absent in left eye and impaired in right, hearing defective. Died October 21, 1906.

The autopsy showed *chronic conditions:*

Emaciation.
Aortic sclerosis with calcification and ulceration in distal half.
Sclerosis of coronary, renal, carotid (expecially distal extremities of internal carotid) arteries.
Mitral sclerosis.
Cicatrices and local ulcerations of ileum (perhaps tuberculous, but not proved).
Chronic adhesive pleuritis.
Chronic diffuse nephritis.
Old scar and local fibrosis of liver.
Cholelithiasis.
Calvarium thin.
Chronic internal hemorrhagic pachymeningitis (right).
Diffuse cerebral atrophy (masked by edema).

*Acute conditions:*

Lobar pneumonia.
Hematoma of right side of scalp.
Bruise of face.
Cultures from blood and cerebrospinal fluid showed streptococcus pyogenes.

Case VI.—D. I. H., 13442, Path. Lab. 1123. Woman, born 1832. *Heredity:* Father died of tuberculosis at 35. Mother died of old age over 80. One sister became melancholy after loss of four children and died in this condition at 75. Five brothers and two sisters normal, lived to old age. *Personal history:* Normal child. Common school education. Shoe-stitcher of fair capacity. Unmarried. Ceased mill work 1885. After 1885 occasionally nursed for small fees. Gradual physical failure since 1887 (then aet. 55). In September, 1906, worried over selling of relatives' house. Later insomnia, visual and auditory hallucinations, confusion lasting a week. Similar episode in October. Again in January, hallucinations, confusion, delusions of poisoning, disorientation for time, place, and persons.

On commitment, January 4, 1907, senility, vision defective, tremor of tongue, lips, and hands, muscular weakness, slurring and stumbling speech, radial and brachial arteriosclerosis, pulse 120, weak and thready, heart enlarged, organic reflexes defective, amnesia for both recent and remote events, complete disorientation, diminished impressibility. The temperature rose from 99° on entrance to 101° evening of January 8, and to 103° evening of January 14. Death January 15, 1907.

The autopsy showed *chronic conditions:*

Emaciation.
Brown atrophy of heart.
Mitral and aortic valvular sclerosis.
Chronic fibrous endocarditis.
Aortic sclerosis.
Coronary, pulmonary, carotid, and basal cerebral arteriosclerosis.
Small saccular aneurysm of right middle cerebral artery.
Chronic diffuse nephritis.
Chronic gastritis.
Chronic adhesive pleuritis.
Uterine polypi.
Calcified lymph nodes in perirectal tissue.
Hemangioma of liver.
Chronic fibrous pachmeningitis.
Diffuse cerebral atrophy.

*Acute conditions:*

Bilateral bronchopneumonia with acute bronchitis and lymphnoditis.
Acute splenitis.
Acute typhlitis and colitis.
No cultures were taken.

Case VII.—D. I. H., 13358, Path. Lab. 1134. Woman, born 1840. *Heredity:* Unknown. *Personal history:* Largely unknown. Attack said to have been gradual in onset; 9 months before admission, about one year before death. Alcoholism probable. Disorientation, vagrant tendency, delusions of suspicion, wandering talk. Emaciation.

On admission feeble, senile skin, arcus senilis, left eye enucleated, cataract of right eye, enlargement of finger joints. Radial arteriosclerosis. Gait tottering. Slight tremor of hands. Brisk knee-jerks and Achilles jerks, plantar reaction slight, abdominal reflexes absent. Delirium and restlessness, with occasional attempts to walk about. Visual hallucinations probable. Was able to obey a few simple directions. Few relevant replies could be obtained. Amnesia for recent events complete; a few isolated facts from past life were recalled.

The patient remained completely disoriented for time, place, and persons; but her attention improved somewhat during the first week after admission. Motor restlessness occasionally appeared during December. Reactions occasionally suggested auditory hallucinations.

Death January 15, 1907.

The autopsy showed *chronic conditions:*

Emaciation.
Carcinoma of pylorus with metastatic nodule in stomach wall.
Brown atrophy of heart muscle.
Chronic fibrous endocarditis.
Aortic and mitral valvular endocarditis with calcification.
Aortic sclerosis with calcification.

Coronary, pulmonary, basal cerebral (including primary branches), splenic, and renal arteriosclerosis.
Slight hydropericardium.
Scars of left apex.
Bilateral chronic adhesive pleuritis.
Chronic splenitis.
Superficial fibrosis of liver, mesentery, and peritoneal wall.
Left eye absent.
Thyroid small.
Irregularity in thickness of calvarium.
Chronic fibrous pachymeningitis.
Diffuse cerebral atrophy.

*Acute conditions:*

Bronchopneumonia of right lower lobe with lymphnoditis.
Central necroses of liver.
Culture from cerebrospinal fluid yielded *B. coli communis.*

Case VIII.—D. I. H., 14099, Path. Lab. 1262. Woman, born 1838. According to patient father died at 72 of asthma. Mother at 50 of pleurisy. Two brothers were still-born; one lived 3 weeks. One sister alive at 65. No insanity or alcoholism in the family. At school till 16. Orthopedic operation at Massachusetts General Hospital in 1854. Occupation, housemaid. Since 1906 at Lynn poor-farm. Noisy and troublesome, singing and screaming at night.

On admission emaciation, contractures of legs and right arm, radial sclerosis slight, prominent temporal arteries, pulse small, rapid, of low tension. Sensations adequate with rough tests. Left ankle-jerk and knee-jerk brisk. Plantar reflexes and right ankle-jerks not obtained. Deafness, facial muscles normal. Blind. Incontinence of urine and feces. Stereognosis for many objects good, but patient could not tell a cent from a quarter by touch. Amnesia for both recent and remote events. Memory somewhat better for remote events.

Death August 16, 1908.

The autopsy showed *chronic conditions:*

Emaciation.
Contractures of legs and right arm.
Brown atrophy of heart muscle.
Chronic valvular endocarditis.
Aortic and coronary sclerosis with calcification.
Chronic obliterative pleuritis (right) and adhesive pleuritis (left).
Healed tuberculosis of apices.
Generalized adhesions of peritoneum.
Cholelithiasis.
Chronic diffuse nephritis.
Chronic atrophic hepatitis.
Perforation of right tympanum.
Slight diploë.

Cysts and calcified nodules in both ovaries.
Diffuse cerebral atrophy.
*Acute conditions:*
Tuberculosis of lungs.
(Tuberculous?) ulceration of transverse colon.
Cystitis.
Sacral decubitus.

## General Clinical Analysis.

### SEX.

This series of eight cases happens to be composed throughout of women. This fact is in accord with previous experience in the type of senile case termed by Kahlbaum *presbyophrenia*. Systematists like Kraepelin, for example, mention the predominance of females in presbyophrenia, but fail to note any sex differentiation in other mental disorders of the senium (senile depressions, deliria, delusional insanities).

A peculiar fact looking in the same direction was the statistical point made two years ago by Mitchell and the writer,[4] viz., that the female brains accruing from a series of insanities developing in the sixth and seventh decades were more often atrophic (8 of 11) than the male brains (5 of 12). As we then pointed out, the average age at onset of the females (58.4 years) was not much different from the male average age (59.5 years). But the females survived after onset on the average 8.8 years, whereas the males survived on the average only 2.8 years.

Assuming (what has not yet been proved) that a large series of statistics would yield similar results, we should be confronted with the problem how to explain the remarkable viability of females presenting the clinical features of senile dementia and *pari passu* undergoing cerebral atrophy.

A large series of cases is strictly necessary for the solution of this problem. For the moment it is enough to call attention to the somewhat remarkable fact that of all the cases (42) agreed upon as senile dements at the Danvers State Hospital, 1904-8, there were eight cases which showed a relatively pure brain atrophy, and these eight were all females.

## Heredity and Antecedent Factors.

The data concerning *heredity* are lacking in four cases. Two cases have no heredity of insanity, whereas two more have some

taint (872, "father and two brothers senile dements"; 1133, "one sister melancholy after loss of children"). Two cases appear to have been born to asthmatic parents (mother of 872, father of 1262).

The history with respect to *antecedent factors* is unobtainable in three almshouse transfers. Alcoholism is probable in one case (1134), the same which showed pyloric cancer at autopsy. The onset in one case is somewhat doubtfully related with a fall four years before death (849), and in one case is more definitely related with a fractured thigh (872). This case of mental disease subsequent to fractured thigh is the case in which we have the best evidence of hereditary taint, in which also we have record of a melancholy disposition throughout life and delirium during fever at the age of 51.

In two cases it appears that there were no upsetting factors (1103, 1133).

It would be of the greatest interest if we knew what relation these conditions bear to the menopause, but the data are lacking.

The important antecedent factors (except heredity) may be briefly enumerated as follows, based in part on clinical history and in part on autopsy findings:

872. Always melancholy, delirious in fever at 51 (old double pleurisy), fracture of thigh at 74, marked general and coronary arteriosclerosis, scar of right apex, chronic Bright's disease, malnutrition, double cataract, deaf.

849. Fall at 82, gall-stones and chronic fibrous peritonitis, obsolete tuberculosis of both lungs, radial, brachial, basal cerebral (no coronary) arteriosclerosis, chronic Bright's disease, obese, blind in one eye, deaf.

1050. Varicose veins; coronary, splenic, and renal arteriosclerosis; chronic Bright's disease; heart hypertrophy; impairment of vision and hearing.

1058. Heart hypertrophy, edema of legs, chronic Bright's disease; aortic, coronary, and basal cerebral arteriosclerosis; thyroid hypertrophy; malignant tumor of right kidney; vision defective.

1103. Corneal thickening at 59, left eye blind and right eye defective at 68, hearing defective, chronic Bright's disease, gall-stones, scars and ulcers of ileum, emaciation.

1133. Physical failure after 55, business worry at 74; radial, brachial, coronary, pulmonary, carotid and basal cerebral arteriosclerosis, chronic gastritis, chronic Bright's disease, organic reflexes defective, vision defective, emaciation.

1134. Alcoholism, pyloric cancer, general arteriosclerosis; left eye enucleated, cataract of right eye; emaciation.

1262. Gall-stones and generalized adhesions of peritoneum, chronic Bright's disease, healed tuberculosis of apices, aortic and coronary arteriosclerosis, blind and deaf.

## Social Factors.

The above histories appear at first sight to have little of importance in common. There is, however, certainly little convincing evidence that social factors play much part in the antecedents of these cases (even in Case 1133 the business worry seems to be part and parcel of the disease, as it set in long after the onset of physical failure). Whatever the causes of the brain atrophy, it seems that they cannot be social.

## Defects of Vision and Hearing.

But, if social factors are wanting, it is not so certain that individual psychic factors play no part. It is remarkable that all eight subjects showed severe defects of vision, combined in five cases with considerable deafness. The hypothesis lies very near that some part of the mental picture must be related with these defects of the long-distance receptors. Opinions differ as to the capacity of such defects to produce insanity. Congenital or early defects of the sort notoriously fail to produce insanity. But may not acquired blindness and deafness become effective in producing insanity when other senile conditions coexist? The history of case 1103 might suggest this.

On the other hand, it might not be unreasonable to see in the blindness and deafness merely effects of the cerebral atrophy. This is possible, though it must be pointed out that the blindness in some cases was partly peripheral, originating in cataracts in some cases and in corneal thickening in Case 1103. Careful cortical study is essential in the solution of this problem. In any event, we may suspect that a vicious circle exists in these blind and

deaf dements, such that by a process of diaschisis the loss of long-distance perceptions reacts unfavorably upon a mental life already damaged in a variety of ways.

Are there any further common factors in these antecedents? As in the case of heredity and social environment, so too in the case of vicious habits, infectious diseases, and malignant disease, we find no constant or common factors in this small series.

### Relation to Manic-Depressive Insanity.

A specific question likely to be raised about any senile mental disorder is, have there been previous attacks? Should we align these cases with the manic-depressive group of Kraepelin? There is, I suppose, no à priori reason why a manic-depressive subject may not eventually succumb to cerebral atrophy. I am disposed to think, however, that the brains of such cases usually stand up well and that manic-depressive cases, when they reach the senium, will be found rather in the arteriosclerotic group or the "normal" senile group than in the group of atrophies now under discussion.

The present small group of cases is in some respects unsuitable for this purpose. 872 is possibly, if by no means probably, a manic-depressive case.

The problem has been approached in an interesting manner by the English Commissioners in Lunacy (1905 and 1907),[5] who have shown that, in 20,680 admissions to English and Welsh insane hospitals (1903), the cases of first and not-first attacks were distributed as follows:

| | First Attacks. | Not-First Attacks. |
|---|---|---|
| All cases not senile dements | 13,970 | 5,546 |
| Senile dements | 1,058 | 106 |

Making all due allowance for the inadequacy of data in these aged subjects, it would appear certain that senile dementia cannot be made to include a tremendous proportion of manic-depressive cases.

We are reduced, then, in the particular small group of cerebral atrophies here considered, approximately to one of two etiologies—either to inherited tendencies or to causes operating in some concealed fashion in or prior to the senium. Obviously too, these two factors—inheritance and certain senile or presenile agents—may coöperate to produce senile mental disorder.

## Arteriosclerosis.

Since our data are thus far neither for nor against inheritance as a factor, we must consider the most prominent senile condition with which we are familiar—arteriosclerosis.

It has been the fashion to ascribe senile dementia, or a great part of its phenomena, to cerebral arteriosclerosis. Perhaps this relations was first asserted most confidently in Forel's clinic, whence Nötzli in 1895[6] issued a monograph on senile dementia, without, however, offering microscopic confirmation of the gross relationship asserted. This subject is considered at length in the anatomical sections.

Five of our series showed palpable sclerosis of the radial arteries (one of these, 1262, in which the radial sclerosis was slight showed prominent temporal arteries). Two cases, 872 and 849, were markedly arteriosclerotic clinically, and these proved to show the most marked general arteriosclerosis anatomically.

Three cases gave little clinical evidence of arteriosclerosis, and three more were but moderately sclerotic clinically.

In short, it would be difficult to prove any close clinical relation between arteriosclerosis and senile brain atrophy.

It must be borne in mind, however, that no one of these cases failed to show anatomically a certain amount of arteriosclerosis. In accord with general experience, this sclerosis was of focal and irregular distribution, affecting some organs and sparing others.

The clinical lesson appears to be that neither the presence nor the absence of radial arteriosclerosis offers important clues to the presence of cerebral arteriosclerosis. Not even the presence of severe changes in the radial arteries, or the concomitance of brachial arteriosclerosis, will permit us to divine the degree or even the presence of arteriosclerosis affecting the smaller or even the larger arteries of the encephalon. The same relation holds between peripherally demonstrable arteriosclerosis and, e. g., renal arteriosclerosis.

## General Clinical Features.

From the etiological or genetic points of view, we have incidentally considered several general features of these cases, such as the *blindness* constantly present in some degree, coupled frequently

with some *impairment of hearing,* the tendency to peripheral *arteriosclerosis,* etc. These findings may be unified as follows:

Our group consists of eight blind old women, who all presented characteristic signs of senility on inspection, having a senile skin, and, as a rule, also *arcus senilis,* being almost or quite toothless, and diffusely wasted or weak in the voluntary muscular system, and subject as a rule to general emaciation. In short, these subjects could scarcely be distinguished from so many old almshouse inmates, non-insane. Even the blindness would not serve as differentia, as it seems to be grounded in a variety of lesions in the different cases.

Upon further examination, we find no constant situation or degree of peripheral arteriosclerosis, and little agreement in the general characters of the pulse (tendency to increased rate in the more obviously sclerotic cases). The heart is not constantly enlarged, nor are there any constant features upon auscultation. The renal data have not been consistently worked up (partly by reason of difficult collection of urine), but the autopsies have shown always either a chronic diffuse nephritis or renal arteriosclerosis. No other metabolic phenomena have been thoroughly examined. There is certainly no obvious metabolic fault in these cases beyond that which may accompany senility.

Comparatively few signs of focal lesion were made out upon neurological examination:

872. Questionable paraphasia, organic reflexes defective, pupils non-reactive to light (double cataract).

849. Lingual and labial tremor, left knee-jerk, left elbow and forearm reflexes exaggerated, right leg held flexed and weaker than left, incoordination in foot movements, muscle sense in legs diminished.

1050. Not remarkable.

1058. Lingual tremor, tremor of hands, wrist and triceps reflexes brisk, knee-jerks and Achilles jerks diminished, gait unsteady.

1103. Lingual tremor, slight incoordination of fingers.

1133. Slurring and stumbling speech; lingual, labial, and manual tremor; organic reflexes defective.

1134. Slight tremor of hands, abdominal reflexes absent, knee-

jerks and Achilles jerks brisk, plantar reaction slight, gait tottering.

1262. Left knee-jerk and Achilles jerk brisk. Right Achilles jerk and both plantar reflexes absent. Organic reflexes defective. Stereognostic sense impaired (?).

Thus, *tremors, absence* of certain *superficial reflexes, variations* in some *deep reflexes* (tendency to loss of leg reflexes), *defective organic reflexes,* alterations of *gait,* and occasional slight *speech* disorder characterized these patients. Correlations with the details of the protocols and with the microscopic findings has so far not shown adequate reasons for the majority of these clinical findings. 1058 and 1134 seem especially consistent with present neurological knowledge. An examination of the spinal cord in 1134 showed a slight bilateral (approximately equal) pyramidal tract degeneration, as evidenced both by the Marchi preparations and by the neuroglia reaction. This degeneration appears to have been due to the atrophy of the brain which showed "convolutions, except of orbital surface, markedly atrophic, and atrophy especially marked in the Rolandic, parietal, and superior temporal gyri." The Betz cells of both precentral gyri are reduced in number, but the survivors show both axonal reactions and satellitoses. From these findings it may be concluded that such reflexes as those of 1134 do not directly depend upon focal lesions due to arteriosclerosis, but many hang upon atrophic cortical changes, in some instances at least.

Upon the mental side, communication is often rendered difficult through the defective vision and hearing of the patients, and there may be a not unnatural lack of spontaneity in their total relations with the outer world. It is difficult to prove by coarse tests that there is any loss of peripheral sensory power beyond that in sight and hearing; nevertheless such loss or diminution may be suspected to exist.

There is at all events certainly a deficient impressibility or perceptual capacity in these patients, which, coupled with a characteristic incapacity to remember recent events, serves to narrow the mental life to a remarkable degree. Whether the disorientation for time, place, and persons, so frequently noted, is quite constant and inevitable, may be doubted. Perhaps the condition would be

better described as *lack* of orientation, than as positive disorientation.

The amnesia for recent events is constant. Whereas memory for remote events is also frequently deficient, the amnesia for recent events almost always surpasses that for remote events. (One exception, 1050, was an almshouse transfer who had apparently never been able to read or write.)

Both as a consequence of deficient sensory and perceptual capacity and by reason of the marked amnesia for current events, the intellectual life is much reduced in volume as well as devoid of variety.

So far the description qualitatively differs only slightly from what one might expect in the aged, and many writers give the impression that they regard senile dementia as a kind of projection of senility, in which the features of senility will be found to a more pronounced degree.

What is the ground of commitment of these subjects to insane hospitals? In the first place, aside from the question of insanity, these patients are difficult to handle by reason of their muscular weakness, blindness, and deafness, and sometimes by reason of disorder of organic reflexes. Strictly speaking, all these features of the disease could be handled outside of insane hospitals. Possibly 1050 was a case not, in the strict medical sense, insane.

*Delusions* were made out in four cases (fear of death, "holy water taken away," poisoning, suspicion), but occupy no prominent place among the symptoms.

*Hallucinations* or *illusions* were demonstrably or probably present in five cases at some stage. One case had before commitment many frightful dreams. The hallucinatory phenomena were as a rule visual or auditory or both, and it is difficult to say whether peripheral or central activity was the more responsible for these findings.

The hallucinations are in part chargeable with bringing about the nightly restlessness and noise of some of the patients, but apparently only in part, since the same restless, noisy, troublesome characters are exhibited by other non-hallucinated patients.

The most constant feature in these patients aside from the exaggerated senile features above enumerated, is *motor excitement*. This was present in all but two cases (1050 and 1103). Restlessness and screaming or howling at night are characteristic. The

patients have spells of motor restlessness, alternating with quiet periods. The violent movements and noisy shouting are apt to come on suddenly and to quiet down gradually. During the spells patients are resistive. The garrulity of old age was exhibited in 1050 only.

AGE, ONSET AND DURATION IN ATROPHIC CASES.

| | Age at Onset. | Character of Onset. | Duration. | Age at Death. |
|---|---|---|---|---|
| 872 | 74 | gradual, after thigh fracture. | 7 | 81 |
| 849 | 81 | gradual, after a fall? | 4 | 85 |
| 1050 | 70 | unknown | 2+ | 72+ |
| 1058 | 61 | unknown | 2++ | 63+ |
| 1103 | 69 | gradual | 2 | 71 |
| 1133 | 74 | gradual | ¼ | 74 |
| 1134 | 66 | gradual | 1 | 67 |
| 1262 | 68 | unknown | 2 | 70 |

GROSS ANATOMY OF THE BRAIN.

The pia mater was normal or approximately normal in 5 of 7 cases in which its condition was noted; but in case 1058 it showed a slight diffuse fibrous thickening especially well marked over the vermis of the cerebellum, and case 1262 showed a few small opaque-white spots over the sulcal vessels. There was a well marked compensatory edema of the pia mater in six cases, but in one case, 1103, four days post-mortem, the brain substance had become soft and inelastic and had apparently imbibed most of the pial fluid. The basal cerebral vessels showed sclerosis in five cases; in one of these the sclerosis was confined to the basilar and vertebral arteries. One case showed involvement of the distal extremities of the internal carotid arteries, and in another case only one spot of arteriosclerosis was found in the entire brain, in a secondary branch of the circle of Willis. One case (849) showed a remarkable small varix in the right calcarine region noted and carefully studied by Prof. Barrett.

The brain weights are considered below in a separate table with comparative weights of other viscera. The convolutions, despite the assigned diagnosis of diffuse cerebral atrophy, do not show in all cases a perfectly even wasting. Thus case 872 showed more

marked wasting in the upper left central convolutions. The anterior parts of the brain of case 1058 as far back as the precentral gyri were firmer than the superior parts, and the superior surface was firmer than the inferior surface. This case also showed a slight granular ependymitis of the accessory sinuses of the fourth ventricle. In two (recent) cases it has been noted that the orbital gyri failed to show as much atrophy as the other convolutions. These two cases also showed more marked atrophy in the central and parietal regions than elsewhere. Adjacent to the central and parietal regions of atrophy, case 1133 showed atrophy involving also the frontal gyri, whereas case 1134 showed atrophy more marked in the superior temporal gyri.

The consistence of the brain was firm or increased except in two cases in which the substance was soft, moist, and with diminished elasticity. In one of these no cultures had been taken, but the patient died of lobar pneumonia; in the other (also a case of lobar pneumonia) both blood and cerebrospinal fluid showed streptococcus pyogenes.

## Evidence For and Against Arteriosclerosis as a Cause of Senile Dementia.

Nötzli[6] distinguished the psychoses of the senium into two groups: those without either focal symptoms or focal brain lesions and those with focal brain lesions. The focal brain lesion group was subdivided by Nötzli into two divisions *a:* cases in which there were never any focal symptoms or in which focal symptoms supervened late in the dementia; and *b:* cases beginning acutely with strokes or other focal symptoms.

Nötzli dealt with 70 cases. Of these 70 there were 40 cases without either focal symptoms or focal brain lesion.

The following table has been constructed from Nötzli's data to show the distribution of symptom groups in his 70 cases:

| | Without focal symptoms. | With latent focal lesions. | With focal symptoms. |
|---|---|---|---|
| Senile Mania | 6 | .. | 1 |
| Senile Melancholia | 10 | 3 | .. |
| Senile Delusional Insanity | 4 | 2 | 2 |
| Senile Hypochondria | 1 | .. | .. |
| Dementia Alcoholica senilis | 6 | 1 | 2 |
| Typical Senile Dementia | 13 | 9 | 10 |

Nötzli believes that in the group of senile mental disorders that we can distinguish two clinically different kinds. On the one hand a quiet senile dementia found most frequently in almshouses and nursing asylums, in which the dementia progresses slowly and quietly without periods of excitement. On the other hand diseases which resemble the diseases of adult life having frequently an acute onset and rapid course. Nötzli believes with Forel that the cases of the second kind (found in insane hospitals rather than in almshouses) are very probably of hereditary origin. He believes that cases of quiet senile dementia much more rarely show an inherited disposition to mental disease. In addition to the hereditary mental factor in the acute excited cases, Nötzli hypothecates a hereditary disposition to arteriosclerosis and particularly to cerebral arteriosclerosis.

The fundamental cause of senile dementia is in Nötzli's view cerebral arteriosclerosis and the often considerable atrophy of the brain conditioned thereupon, both in those cases in which atrophy is simple and in cases complicated by focal hemorrhages of softenings. The brain weight was found to be diminished on the average 200 grams and in such wise that the female brain preserved its normal proportion to the male brain in weight. The cerebral cortex was determined by separate weighings to diminish more than the other parts of the brain.

The evidence which Nötzli actually brings as to the relation of cerebral arteriosclerosis and cerebral atrophy is logical rather than histological. He regards all his cases as showing a combination of both processes and answers the question which is primary, as follows: It is well understood that the brain is also affected in the general physiological involution of the organism in old age. The brain is atrophied physiologically, to what degree cannot be expressed in figures, but simple cerebral atrophy can scarcely reach so great a degree, that is to say, yield on the average so low figures for brain weights as Nötzli's series of 70 cases showed. The cause of this atrophy of high grade must rather be sought in cerebral arteriosclerosis which places the brain under such unfavorable nutritive conditions as to cause it to atrophy in greater degree and more quickly.

The cerebral disease process is regarded as a purely degenerative one and as comparable to arteriosclerotic contracted kidney.

It is unwise to conclude that the changes of Nötzli's first group are all based upon nutritive brain disorder due to cerebral arteriosclerosis. Three protocols are presented. Case 34 was a physician 67 years old. It showed thickening and opacity of pia mater, superficial convolutional atrophy, atheroma of basal arteries, extreme dilatation of posterior cornua of ventricles, moist and anemic brain substance and extreme degeneration of the fine cerebral arteries with a brain weight of 1468 grams, the largest in the whole series of 70 brains.

Case 39 was a butcher of 64 years. It showed thickening, opacity, and edema of pia mater, moderate atheroma of basal arteries, extreme atrophy of brain, dilatation of ventricles, the left hemisphere was smaller than the right and the left corona radiata harder than the right. The left corpus striatum, thalamus, and corpus candicans much smaller than right. Cortex 1½ mm. deep on the right; on the left still narrower in many places. The total brain weight was 1044 grams.

Case 40 was a maid-servant 59 years old. Pia mater thickened and opaque. Basal arteries atheromatous. Brain atrophied; convolutions narrowed; convolutional surfaces irregular with groups of small degenerated arteries in some places. Focal atrophy of the left temporal lobe; left insula and left Broca's area thinner than right. Hydrocephalus. No cysts of softening. Brain weight 1106 grams.

Microscopic examination was not carried out in these cases.

Meyer[7] published in 1896 the data of 24 autopsies in senile dements from the Illinois Eastern Hospital for the Insane at Kankakee. Meyer reports that "in most instances there was undoubtedly atrophy of the convolutions present." The weights ranged from 942 to 1562 grams (weight taken "dissected," that is, minus membranes and ventricular fluid) and from 1025 to 1667 grams undissected. The majority of Meyer's cases have no assigned weights, and he shows in an instructive brief table of eight brain weights determinations how important a factor the dissection of the brain is in altering data. In the analysis of Meyer's data we must, therefore, rely rather on qualitative findings, and the grouping of cases is, so far as can be determined by analyzing his data, as follows:

MEYER'S KANKAKEE CASES.

| | |
|---|---|
| Senile dements | 24 |
| Sclerosis of cerebral end-arteries | 11 |
| Brains atrophic, not arteriosclerotic | 6 |
| Brains not atrophic, not arteriosclerotic | 7 |

No endeavor is made by Meyer to consider clinical data with the autopsy notes. In 23 cases with trunk dissection, Meyer noted "as an almost uniform feature on affection of the heart and the circulatory apparatus at large." For example "atheroma of the large blood vessels with hypertrophy of the left ventricle occurred fifteen times." "In only one case the organs of circulation were relatively normal."

The proportion of cerebral arteriosclerosis is treated as follows: "The blood vessels of the brain did not show any macroscopic lesion in the two youngest cases and none are noted in "(another case, a woman of 72)." A fourth case showed slight changes. "In all of these cases there were, however, found beginning atheroma of the aorta, slightly cystic kidneys, and in the two latter ones slight atrophy of the brain; 18 cases had marked atheroma (of the aorta); six of them very advanced calcifications. There has not been a single case observed in which alterations of the blood vessels could be excluded. Most of the other findings can be indeed traced to trophic changes."

Although Nötzli's conclusions with respect to the relation between cerebral arteriosclerosis and senile dementia are quoted, Meyer himself draws no conclusions in his report.

Appeldorn[8] from Schuchardt's Clinic in Rostock published in an inaugural dissertation in 1908 an analysis of 126 cases of insanity arising after the sixtieth year (817 per cent of the admissions to the Mecklenburg Asylum at Gehlsheim, 1897-1906) and among these considers especially 69 cases of what he terms typical senile dementia (not including senile melancholia, senile confusion, and other special forms).

Thirty-two of Appeldorn's cases came to autopsy, and, although the protocols are presented in too condensed a form, it appears that only 13 received or should legitimately receive the diagnosis of

cerebral atrophy. Cysts of softening or very extensive arteriosclerosis are noted in but five cases, although the diagnosis of arteriosclerosis is set down without further specification in numerous other cases.

Appeldorn's data are far too sketchily treated to admit generalizations, and he contents himself with repeating the commonplaces of recent years on this topic. Whereas *Altersschwachsinn* depends on "simple physiological involution of the brain," *Altersblödsinn* or senile dementia depends on a pathological degeneration, eventuating in brain atrophy of much greater degree than that of physiological involution. Appeldorn cites Nötzli's hypothesis of the arteriosclerotic origin of senile dementia, but quotes with favor the hypothesis of Alzheimer concerning ganglion-cell changes of non-vascular origin. Finally Appeldorn agrees with Kraepelin that vascular disease is not extremely prominent in senile dementia and that extremely prominent vascular disease may not lead to insanity at all.

RATIOS OF ACTUAL TO CALCULATED WEIGHTS OF BRAIN, AND HEART, LIVER, AND KIDNEYS.

| Autopsy number. | Sex. | Age. | Actual brain weight. / *Calculated.** | Ratio. | Actual weights heart, liver, kidneys. / *Calculated.** | Ratio. |
|---|---|---|---|---|---|---|
| 872 | F | 81 | 1180 / *1121* | 1.05 | 1280 / *1499* | 0.85 |
| 1058 | F | 63† | 1070 / *1212* | 0.88 | 2840 / *1818* | 1.5 |
| 1133 | F | 74 | 990 / *1121* | 0.88 | 1735 / *1562* | 1.11 |
| 1134 | F | 67 | 980 / *1194* | 0.82 | 1465 / *1740* | 0.94 |
| 1262 | F | 70 | 950 / *1190* | 0.79 | 925 / *1670* | 0.55 |

* From data in Vierordt's *Daten und Tabellen,* Dritte Auflage, 1906, S. 40 usw.

† Very probably too low. In case the patient was 70, the figures run

| | | | |
|---|---|---|---|
| 1070 / *1190* | 0.89 | 2840 / *1670* | 1.70 |

The above table represents a fragment of some work undertaken by Mr. N. S. Burns * and myself to learn whether brain weights vary in the same or opposite directions with certain visceral weights. The general results of this work will be presented elsewhere. It will be seen that in this series the loss in brain weight varied from 21 per cent to 12 per cent, except in one instance where a gain over the calculated weight was registered. This gain was, however, only five per cent, which is almost within the limit of technical error as calculated by Mr. Burns and myself (data not yet published) ; so that at best this brain could be placed in the group of brains " normal " as to weight. As a matter of fact the surprising weight, in the presence of undoubted macroscopic and microscopic signs of atrophy, is perhaps best explained as a result of terminal infection (aureus sinus disease).

Leaving out the excess weight case, the brain weights are observed to vary with the visceral weights in two cases, against those in two others. The two cases in which the trivisceral ratio (as we have termed the ratio involving heart, liver, and kidney weights) is in excess are marked cardiorenal cases.

I present these results not as settling the problem, but as demonstrating that the hypothesis held by many that brain atrophy is due to arteriosclerosis is a quite unsafe hypothesis.

As mentioned above (under the clinical analysis of the arteriosclerosis found), Nötzli's results have had much to do with this hypothesis, but I do not find, upon analysis of his monograph, that much in the way of proof is advanced.

Alzheimer, 1898,[9] leaves in doubt whether senile brain degeneration is due to arteriosclerosis alone, and raises the question whether primary atrophic processes in the nerve cells may not be the true factor.

## Arteriosclerosis.

No case of our series escaped arteriosclerosis completely. Nor would it be wise to exclude this factor from the chain of events culminating in brain atrophy. It seems to me doubtful, however,

* Working in the fourth-year elective in neuropathology, Harvard Medical School, 1908-9, holding an appointment as special laboratory interne, Danvers State Hospital.

whether the coexistence of these two conditions is a very strong argument for their causal relation. One prefers the non-committal position that both visceral atrophy and arteriosclerosis are conditioned upon some more remote cause, as yet unknown. It is certainly impossible to compare the degree of atrophy with the degree of arteriosclerosis, whether general or local. The distribution is as follows:

| | |
|---|---|
| Arteriosclerosis generalized and marked | 5 |
| Aortic sclerosis | 7 |
| With calcification or ulceration | 5 |
| Coronary | 7 |
| Extensive or with calcification | 2 |
| Splenic, especially noted | 2 |
| Renal, especially noted | 4 |
| Basal cerebral | 5 |
| Internal carotid (not basal cerebral) | 1 |
| (Small aneurysm, right Sylvian artery | 1) |

The apparent sparing of the aorta in one case is probably due to an error in the protocol. On the other hand the immunity of the coronary artery in one case was expressly noted.

A tendency to cardiac or cardiorenal disease was observable in many of the cases. The occurrence of chronic renal changes is so constant that it would appear to me far more reasonable to look in the renal direction for factors in the production of brain atrophy than to look in the direction of arteriosclerosis.

### Heart Disease.

| | |
|---|---|
| Cardiac hypertrophy | 2 |
| Valvular disease | 7 |
| Aortic valvular | 4 |
| Mitral valvular | 6 |
| Chronic passive congestion of organs | 4 |

### Kidney Disease.

| | |
|---|---|
| Chronic | 8 |
| Diffuse | 7 |
| Arteriosclerotic | 1 |
| Acute | 1 |
| (Cystitis | 1) |

## Other Chronic Conditions.

Findings suggestive of tuberculosis, as a rule obsolescent, occurred in six cases, and can scarcely be excluded with safety from any case. This fact may easily be a coincidence, but the proportion is far higher than in most similar large *routine* series of examinations.

Other chronic conditions occurred in considerable variety and need not be summarized here.

## The Cause of Death.

Lung disease was prominent in lethal factors (six cases, perhaps seven). The immediate cause of death cannot be exactly stated for all cases, but the positive indications of all properly examined cases are that bacterial infections are found in various loci (not always septicemic) with practical constancy. Thus it will be exceedingly difficult, for histological purposes, to procure an atrophic brain which can be trusted not to show acute effects. And, in a larger hygienic way, it is obvious that the better the nursing conditions, the longer these patients may be preserved.

## Discussion and Microscopic Analysis.

I believe that the time is not ripe for a proper analysis of the cytology of senile dementia. In point of fact, no one can yet state precisely in what old age consists, so that our normal control pictures are lacking.

One of the most striking features of old age is the progressive loss of watery constituents which several of the tissues exhibit. Nowhere is this more striking than in the blood, which according to some writers undergoes a genuine atrophy in old age. If this should turn out to be true, it might be difficult to explain the mechanism of senility on a simple cellular basis like that of Metchnikoff.

In fact it may remain impossible to explain senility either on the basis of Metchnikoff's ingenious hypothesis concerning phagocytes or on the earlier conception of a progressive failure in cell-multiplication.

When the body in senility undergoes a loss of weight affecting virtually all organs in the same proportion, it will naturally be difficult to assign the cause of such loss to any given cell-mechanism.

It is far more likely that some general tendency, e. g., a tendency to partial dehydration, underlies the process.

I believe that some light will be thrown upon this subject by statistical studies in organ weights. Mr. N. S. Burns, who has been working with me in this direction, has prepared a number of comparative tables which show that some cases exhibit differential loss in brain weight, as compared with weights of other organs, whereas in other cases all the weights fall off together.

The whole problem is, therefore, definably complex, and I feel that the communication of cases showing various degrees of neuronophagia without complete life-histories and without knowledge of special bacterial, toxic, or chemical agencies at work upon an organ like the brain will scarcely tend to clear the issue.

Granting that physiological brain atrophy occurs, how can we distinguish pathological brain atrophy therefrom? First, the loss, in weight is more marked in the latter. Secondly, the onset of the process may be premature. Thirdly, the progress of the atrophy, as distinguished by clinical observation, may be much more rapid. Fourthly, a group of cases will show differential loss in brain weight, whereas the other organs will maintain weight better.

Waiving minutiae aside for the moment, it appears that so-called senile dementia will break into several entities, into, first, a group of cases in which there is not at all a true organic dementia, but in which old subjects with normal brains become insane just as younger subjects do (*senile acute psychoses*); secondly, a group in which there is local cortical arterial disease (*arteriosclerotic dementia*); and thirdly, a group in which the brain has undergone pathological atrophy (*senile dementia proper, or atrophic dementia*). Personally, I feel that future work may show that the latter atrophic group will split up into two subordinate groups, (a) a group in which through some metabolic flaw or for some other reason, the brain suffers *pari passu* with the other major viscera, and (b) a group with differential atrophy of the brain, possibly due to a special toxin or inherited tendency. Naturally, I should not wish to exclude combinations of these conditions in given cases, but I hold that detailed analysis should be made, so far as possible, of cases showing these conditions pure.

For reasons stated in the discussion I have not attempted elaborate microscopic analysis of these cases, but will present a number

of examples of photographs illustrating the atrophy in different areas in several cases. (For descriptions, see plates.)

The matter of *neuronophagia*[10] has been of special interest, and my analysis of these and analogous cases has proceeded far enough to show that there is abundant microscopic evidence of the occurrence of pigmented or fat-laden neuroglia cells (" satellite cells ") about the nerve cells of many layers in the senile cortex. Metchnikoff's interpretation of these findings may be upheld as against Marinesco's, as least so far as Marinesco holds the view that nerve cells undergo a kind of pressure-atrophy due to the accumulation of satellite cells. The latter interpretation is certainly not supported by preparations which I have seen.

If any hypothesis as to satellite cell action upon nerve cells need be risked, it is rather that the satellite cells exert some kind of chemical action upon the nerve cells, analogous to that exerted by osteoclasts in dissolving bone. Metchnikoff himself places this process of osteoclasis in a class logically separate from the process of phagocytosis in other organs. In fact, the process of osteoclasis, like Metchnikoff's so-called " phagocytic " action of sarcoplasm upon myoplasm in atrophy of muscle fibers, is regarded by some as not a good case of phagocytosis (in the earlier and stricter sense of a process of ingestion and digestion of particles by cells).

On the basis of observations alone, certainly such tissues as those of this series of brains go far to lend weight to Metchnikoff's assertions. But, whether or not certain trophic changes in the nerve cells antedate the appearance of satellite cells, one is scarcely able to decide. I am inclined to the conception that such changes do antedate the appearance of the satellite cells. If this be the case, Bevan Lewis' interpretation of these cells as scavenger-cells would be preferable.[11]

I have noted with interest that in three of my cases the satellite cells preferred a location alongside the apical processes of the pyramidal cells rather than the more frequent position at the bases of the cells. The frequency of this picture leads to the conception that in these cases the apical processes are the first to undergo atrophy, and possibly at a time when the axone is maintained. Two of these three cases were the oldest in my series (872 age 81, duration of mental disease seven years; 849, age 86, duration of mental disease four years). The third case, however, was but 67

years old with an assigned duration of mental disease of but one year (1134). The other cases of my series showed no preferred location for these cells, except the ordinary basal position with accumulation along the sides next the base. I have, for the present, no explanation for this finding.

The microscopic examination shows that minor vascular changes are observable even in this material, chosen especially to exclude vascular changes. Nor is it impossible that research may demonstrate a connection between these changes and the nerve cell and fiber atrophy. I am not convinced, however, that any strict proof has ever been brought of a causal relation between the changes mentioned. Notably they do not run *pari passu*. Wide stretches of tissue exhibit atrophic changes without attendant vascular changes of any consequence.

My contention is not that general nutritive conditions, in part arteriosclerotic in origin, may not have a hand in brain atrophy. Such conditions may lead to brain atrophy, as perhaps to arcus senilis, loss of teeth, or the senile skin. My argument is rather that no evidence has as yet been brought that *local* vascular changes produce brain atrophy. I feel, too, that in the long run we must also look back of the vascular system for an explanation of senile atrophic changes in general, and that we deal here perhaps with conditions similar to those unknown conditions which underlie thymus atrophy or menopause changes.

## Summary and Conclusions.

1. Forty-two cases unanimously diagnosed "senile dementia" at the Danvers Hospital clinics have been reviewed clinically and anatomically, with a surprisingly low general percentage of accuracy (66 per cent) where *either* cerebral atrophy *or* cortical arteriosclerosis or both were regarded as confirmatory, and with still lower percentages: (48 per cent) where cortical arteriosclerosis was considered essential and (38 per cent) where cerebral atrophy was considered essential for a correct diagnosis.

2. The 14 cases which showed neither cerebral atrophy nor cortical arteriosclerosis (with obvious damage to the cortical tissues) are cases which probably should not have been termed senile dementia, and perhaps more properly belong in a group of acute

psychoses or other mental diseases occurring in old age but not dependent on recognizable senile changes.

3. Of the residuum, it is clear that cases in which cerebral atrophy and cortical arteriosclerosis are combined are not suitable for exact study, and attention has been concentrated upon eight cases of relatively pure brain atrophy, regarded as representing more nearly genuine senile dementia than the arteriosclerotic cases, which should be classed under the head of organic dementia.

4. True senile or senile atrophic dementia includes 1) cases in which the loss in brain weight proceeds *pari passu* with a general loss of weight in the other viscera and 2) cases in which the loss in weight of the nerve tissues is differential.

5. The mental diseases of old age, therefore, include

- (a) mental diseases occurring in, but not characteristic of, old age;
- (b) organic dementias due to cortical arteriosclerosis;
- (c) senile atrophic dementias, attended with
  - (1) general visceral atrophy,
  - (2) differential atrophy of the nerve tissues.

6. Obvious suggestions for research in the two groups of senile atrophic dementias as above stated are that the phenomena of general visceral atrophy may depend upon general decadent agencies (dehydration?) and that the more differential atrophy indicates special metabolic flaws or toxic agencies.

7. Since such a grouping has not been hitherto rigorously borne in mind, it is not possible to state the clinical features of these cases in detail.

8. Taking the group senile atrophic dementia as a whole, we find all the eight cases female, without special indications of inheritance, with very various antecedent factors (social factors not prominent), all markedly defective in vision (though for a considerable variety of reasons), often defective in hearing, all subject to various degrees of arteriosclerosis (in some instances not clinically made out), all showing the characteristic external signs of senility, and all showing either chronic diffuse nephritis (interstitial type predominant) or renal arteriosclerosis.

9. Neurologically, the eight cases showed characteristically *tremors,* absence of certain *superficial reflexes,* variations in some

*deep reflexes* (tendency to loss of leg reflexes), *defective organic reflexes,* alterations of *gait,* and occasional slight *speech* disorder.

10. Psychiatrically, communication with the patients is difficult and impressibility or general perceptual capacity is deficient. The amnesia for recent events is characteristic and constant. The patients are perhaps *unoriented* rather than disoriented. Amnesia for remote events is also frequently present. Delusions are not prominent. Visual or auditory hallucinations (or illusions) characterized some cases. Motor excitement and nightly restlessness and noise are characteristic, though not quite constant, and are not in all cases certainly due to hallucinations. Garrulity was surprisingly uncommon in this group.

11. Anatomically the pia mater was in general remarkably free from chronic changes, and, as the condition of the vessels was the basis of selection of the cases, the vessels naturally showed nothing grossly beyond involvement of the larger or pipe arteries (basal cerebral arteriosclerosis). The cerebral wasting was not in all cases quite uniform. One case even showed a slight granular ependymitis. The consistence of the brain tissue was in general increased.

12. A high percentage of obsolete tuberculosis characterized the autopsies.

13. Aortic sclerosis is probably constant in these cases. Sclerosis of other vessels is frequent but variable. The constancy of renal changes is interesting.

14. The cause of death is pulmonary in many cases, and is perhaps in some way bacterial in all.

15. No intensive microscopic examination has been undertaken, as the object has been rather to define the group of senile atrophic dementias. The satellite cell findings are consistent with Metchnikoff's hypothesis concerning phagocytic processes in old age. It is believed, however, that cell and fiber changes are very probably primary and "neuronophagia" secondary, or at any rate that these processes run *pari passu.*

16. A few cases showed satellite cells preferring the apical cell processes rather than the basal regions of the pyromidal cells.

17. It is alleged that no convincing evidence has been brought of a causal relation between *local* vascular changes and diffuse senile nerve cell atrophy.

E. E. SOUTHARD.

FIG. I.

E. E. SOUTHARD.

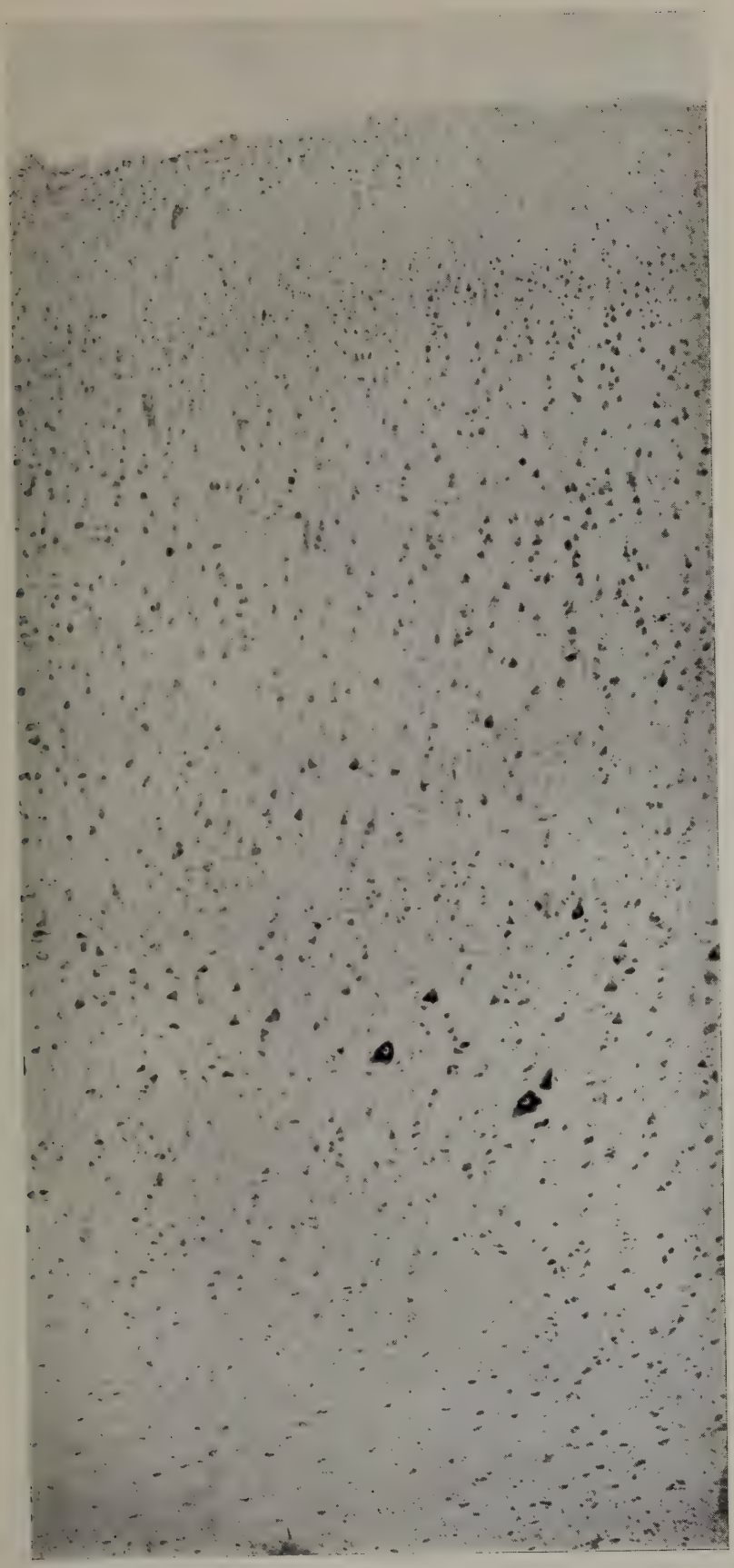

FIG. 2.

E. E. SOUTHARD.

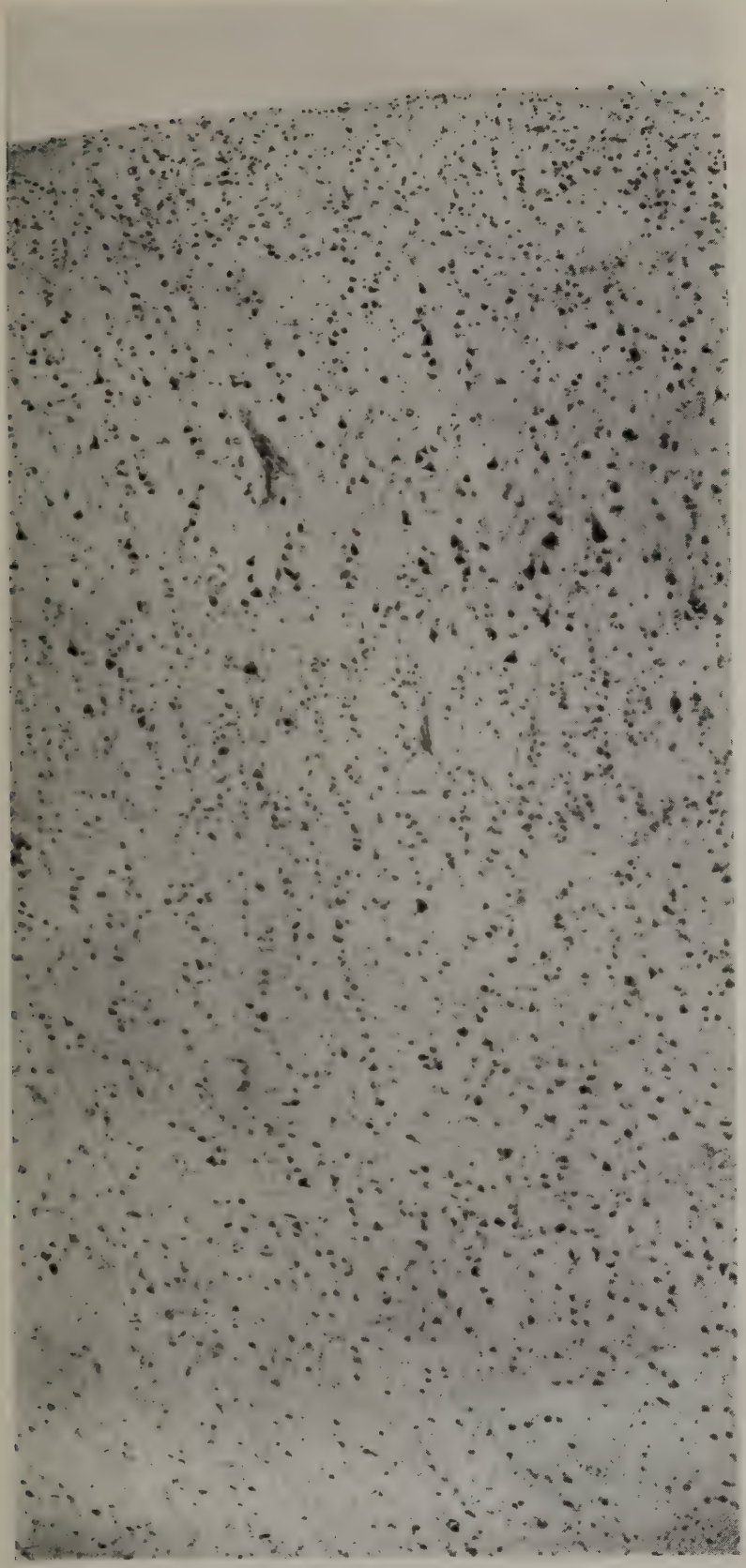

FIG. 3.

E. E. SOUTHARD.

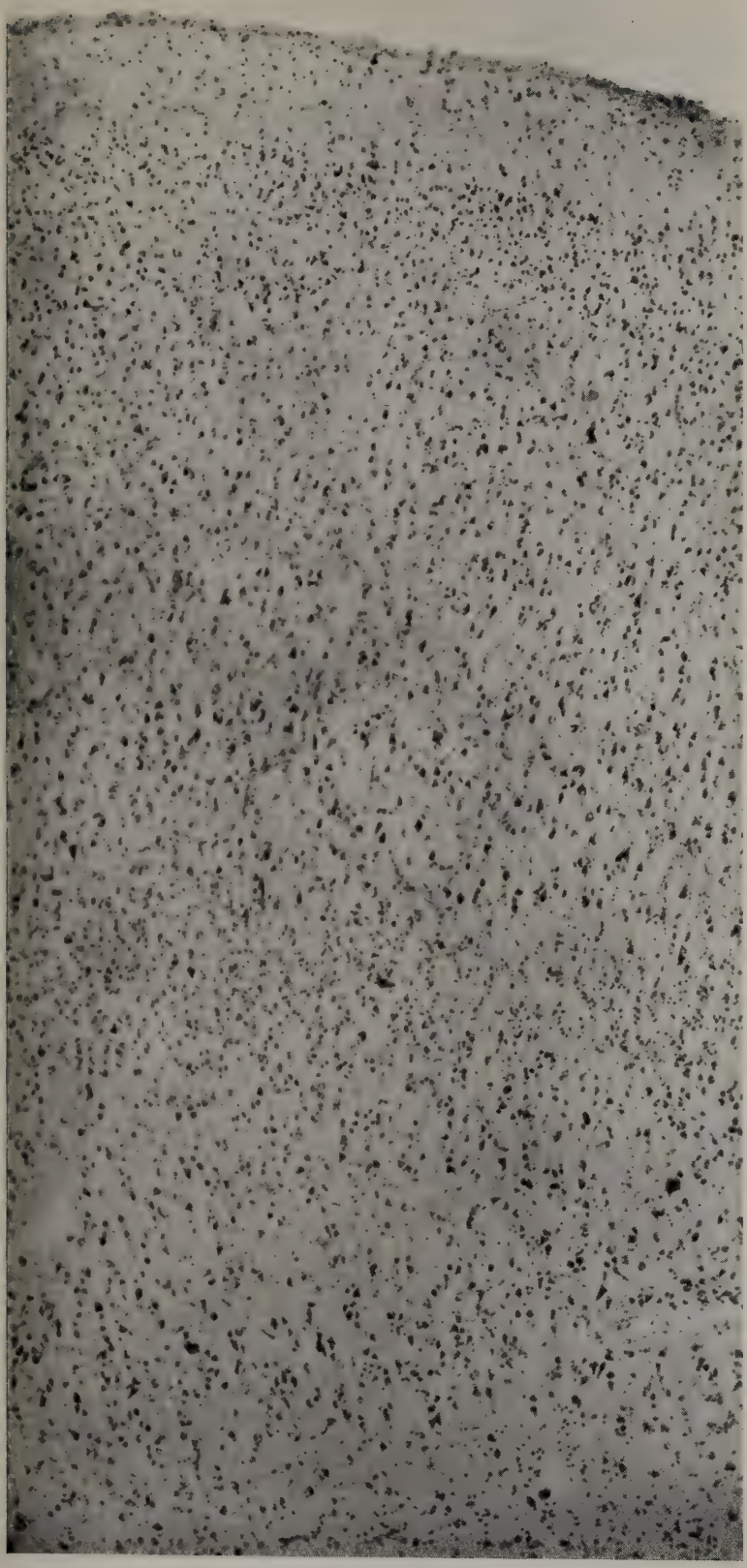

FIG. 4.

E. E. SOUTHARD.

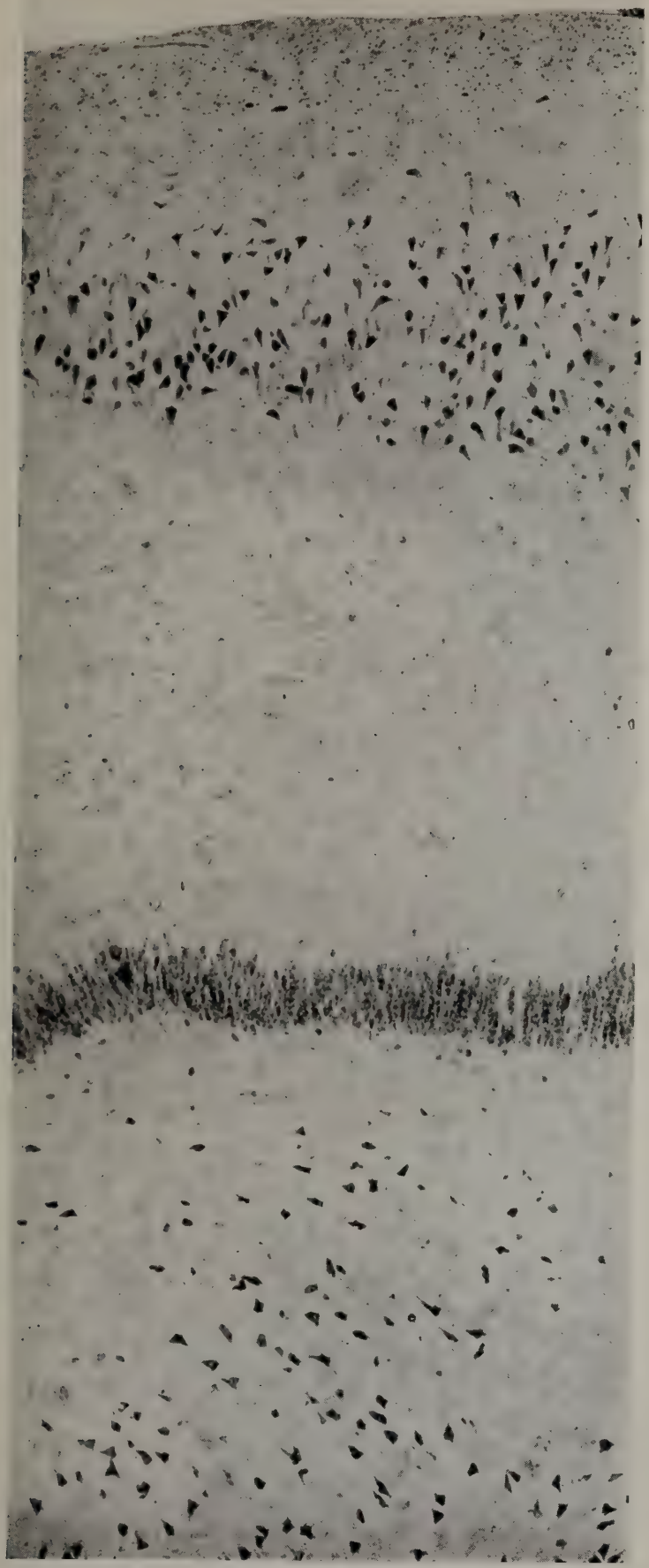

FIG. 5.

E. E. SOUTHARD.

FIG. 6.

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## DESCRIPTION OF PLATES.

The photographs are in each instance from material fixed in alcohol and stained in unimbedded sections according to the original Nissl methylene-blue method.

The magnification is approximately 50. The sections were approximately 20 $\mu$ thick.

Fig. 1.—Left superior frontal gyrus (about midway) in Case I, female, age 81. The dementia developed gradually after a fracture of thigh, age 74. The photograph demonstrates generalized atrophy possibly more marked in the suprastellate layers and most marked in the layer of medium-sized pyramidal cells. The absence of vascular alterations is striking.

Fig. 2.—Left paracentral lobule in Case II, female, age 86. The dementia in this case developed gradually after a fall, age 82. The photograph demonstrates generalized atrophy. Some irregularity in the process is indicated by differences in the reaction of the neuroglia in the subpial layer; the neuroglia reaction is shown to be of more recent and cellular type on the left side of the photograph.

Fig. 3.—Right superior temporal gyrus of Case V, female, age 71. The dementia in this case developed gradually, age 69. The photograph demonstrates generalized atrophy. Considerable neuroglia reaction is evident in the subpial layer. Some irregularity in the process is demonstrated

prominently in the external layer of large pyramids, most of which have, however, undergone atrophy or total loss.

Fig. 4.—Left calcarine region of Case V. The photograph demonstrates generalized atrophy with considerable neuroglia reaction throughout. A solitary cell of Meynert is demonstrable below. Numerous neuroglia cells are seen in many places between the nerve cells. These are perhaps most marked in the outer pyramidal layers.

Fig. 5.—The left hippocampal gyrus of Case VII, female, age 67. The dementia in this case developed gradually about a year before death. Nerve cell losses and some neuroglia replacement are obvious in most layers.

Fig. 6.—Lamina from the right cerebellar hemisphere of Case VI, female, age 74. The dementia in this case developed gradually a few months before death. The photograph demonstrates a narrowing of the molecular layer upon the laminar surface which is striking as compared with the maintenance of depth in the molecular layer of the sunken portions of the lamina. Corresponding with the marginal diminution of the molecular layer there is a conspicuous absence of Purkinje cells as well as a development of neuroglia cells in the Purkinje cell belt. The neuroglia cells of the molecular layer are in general probably somewhat increased in number. Nor is there a proper quota of Purkinje cells in the lamina as a whole. Despite this atrophic process the vessels of the cerebellum show remarkably little alteration.

## DISCUSSION.

Dr. Abbot.—In autopsies on elderly persons without mental complex, I would ask whether he finds a decrease in weight, with or without arteriosclerosis?

Dr. Rosanoff.—I think the experience of Dr. Southard is similar to that of other pathologists. He has pointed out that the differentiation between senile dementia and arteriosclerotic brain disease presents clinically very considerable difficulties; the common co-existence of the two conditions complicates the matter further. But it seems to me that the inherent diagnostic difficulties do not account fully for the discrepancies which occur in such cases between the clinical report and the post-mortem findings; I believe that the pathologist is here a little in advance of the clinician. There exists among clinicians a tendency to make a diagnosis of senile dementia in any case of deterioration process occurring in senility, and owing to this tendency symptoms more or less characteristic of cerebral arteriosclerosis are often either overlooked or else merely recorded and not accounted for. A similar tendency exists to make a diagnosis of alcoholic psychosis in cases with a history of excessive use of alcohol without due regard for the details of the symptom complex.

Dr. Packard.—Not long ago I heard a prominent German psychiatrist who is by no means an old man say that when he began his work in psychiatry diagnosis was much simpler. For example if they were dealing with a patient who had reached middle age and who showed evidence of dementia, there was but one question to ask, How old is he? If over 60 he was a senile dement; if under 60 he was a general paralytic. Long ago such easy diagnosis has passed, and now for several years we have not only been able to differentiate senile dementia from general paralysis, but we have been recognizing that there were certain conditions in younger men which often simulated general paralysis but were due to different lesions, and we are now constantly differentiating between general paralysis and arteriosclerotic dementia. Dr. Southard's paper takes us a step farther and shows us that even amongst the older patients there is a chance for differential diagnosis, and that we must differentiate between the pure senile dementias, the arteriosclerotic dementias in old people, and possibly some other condition. The errors in diagnosis which he points out are quite striking and undoubtedly I think partly due to the lack of a clear conception to what senile dementia is due. In looking over the records of the last two thousand admissions at McLean Hospital I found that there had been 54 cases diagnosed senile dementia. I ought perhaps to explain that this small percentage is due to the fact that we tend to take the acute rather than the chronic cases.

In most of these cases there was no autopsy and, therefore, I cannot speak with such certainty about the real underlying condition, but on looking over the records carefully I found that 31 of the 54 cases showed various combinations of symptoms such as marked peripheral arteriosclerosis, seizures, paralyses, etc., which indicated cerebral arteriosclerosis. Of course these lesions may have been associated with a senile brain atrophy and we can only say that they were not cases of uncomplicated senile dementia. This work of Dr. Southard is not only encouraging in that it shows we are still making progress in pathology, but it opens up the possibility of further clinical differentiation. Whether or not such differentiation will be possible clinically I am not quite sure and have not had time to go over my cases thoroughly enough to form any very definite opinion. But there are certain things which do stand out quite clearly; for example, in these 54 cases all showed a memory defect of some kind; all had a memory defect for recent events. In 16 cases the memory for old events was little impaired and thirteen of these 16 cases were amongst those with signs of arteriosclerosis. The eight cases which showed the best orientation also belonged to the arteriosclerotic group. Further interesting facts noted were that taken on the whole the duration of the arteriosclerotic cases averaged 3.3 years, while that of what we may call the pure senile cases averaged 6.1 years. The duration in women was about twice as long as in men. It was further noted that in 13 cases the urinary examination was negative, but all 13 cases were amongst those with no evidence of arteriosclerosis. I am of the impression that there are numerous traits to be noted

which are more or less characteristic of arteriosclerotic conditions which may be helpful from a clinical standpoint, and that careful observation may lead to some interesting results.

Dr. Southard.—In answer to Dr. Abbot's question, during my connection with the Boston City Hospital, I had an opportunity to do numerous autopsies on senile, non-insane subjects. Of course I found many cases of cerebral arteriosclerosis particularly involving the larger arteries in the City Hospital cases. Certainly no one is warranted from the mere finding of arteriosclerosis of the basal cerebral arteries or of the primary branches of the circle of Willis in stating that the patient must have had mental disease, or even was likely to have had it.

I should go somewhat further and assert that perhaps we really do not know the cause of mental disease in cases of senile dementia. In my paper I tried to give arteriosclerosis the benefit of the doubt, so to speak, with respect to its share in the causation of insanity. As a matter of fact, although I cannot state it positively, I feel much doubt concerning the relation of arteriosclerosis to insanity. The best evidence which we have of the relation of arteriosclerosis to insanity is in those cases with focal areas of encephalomalacia in which it may be possible to show mental effects in the shape of amnesias.

With respect to Dr. Rosanoff's remark as to the difficulties of diagnosis, I was inclined to believe at first that the relatively inaccurate diagnoses in senile cases were due to laxity or apathy in the diagnostician. Possibly it is a tendency of the pathologist to feel that diagnoses have not been thoroughly made in many cases that come to autopsy. But on looking over the clinical records and the records of the staff-meetings I concluded that the diagnoses were very faithfully made. Since the one-man method of diagnosis has been replaced at the Danvers Hospital by a republican method in which diagnoses of from three to eight men are recorded in a given case, I find that almost all cases undergo keen scrutiny and are very consistently diagnosed.

Dr. Packard's McLean Hospital series gave, it appears, a percentage of 57, probably showing focal lesions according to careful clinical review, with this point in mind. I noted in Dr. Packard's account that the cases with arteriosclerosis lasted about three years and the cases of atrophy over six years. It would be wise to look up the sexes of these individuals. Last year Dr. Mitchell and I reported a series of cases of insanity arising in the sixth and seventh decades of life. We found in our series that the average survival after onset of the males was 2.8 years; of the females 8.8 years. The female brains showed, as a rule, much more atrophy than the males. The age at death of the females averaged 67.2; the age at death of the males averaged 62.3. I felt that the atrophy in the female cases was related rather with the processes of old age than with insanity.

I am pleased to observe the general interest in the matter of the diagnosis of insanity in the senile. I hope that eventually we can differentiate between cases showing focal lesions and cases without.

# MEMORIAL NOTICES.

## DR. CHARLES FOLLEN FOLSOM.

When the news of the death of Dr. Charles Follen Folsom was telegraphed from New York to Boston, on August 20, 1907, a large circle of persons—social acquaintances, patients, and professional colleagues—felt that they had lost the support of a faithful adviser, the companionship of a dear friend.

It is a fortunate asset of the physician's life that he enters into intimate personal relationships with many of the individuals who turn to him for advice, and has an unusual chance to cultivate his powers of sympathy. But there have been few physicians of this neighborhood and generation in whom these fires of personal sympathy have burned so warmly as they did in Dr. Folsom, or who have been able to inspire with reciprocal emotions so many of their patients and their friends. The growth of these attachments was genuine and unforced, for they were based on well-grounded affection and respect.

Dr. Folsom had settled in Boston, with a record of two years' faithful service for the freedmen, but without influential connections and with no instinct for advertisement of himself. He showed, however, marked ability as a practitioner, marked willingness to labor for results worth having, a high standard of thoroughness and obligation, and the highest possible standard of friendship, and it was not long before these qualities made him a real figure among real men and women in our community. Some extracts from a letter to his intimate friend, Rev. William C. Gannett, written about 1881, will recall some of his characteristic traits. He says: ". . . . I do not agree with you as to not making friends, even if it does hurt to tear up the roots. Go as deep, say I, into as many human hearts as you can. Never lose a single chance for knowing one person, even, well. In fact, it is the only thing in the world that pays. You do other things

because you must, or it is your duty to do so, but that does not pay. You do not get back anything, and the volcano inside of one only rumbles and growls to itself instead of letting its smoke and brimstone out in the world,[1] whereas in knowing people well you get more than you give."

"Yes, I am going to Munich to study with Pettenkofer and Voit and Wolfhügel. I have the work to do and I want to do it as well and as much of it as I can.

"But I do not care when I stop, whether next year or next week or next century. So long as the machine runs, I want to keep some useful spindles going.

"I suppose I shall say Good-bye, next month, to many I may not see again, but I can't think of the 'gradual forgetting'; that seems hardly possible, and life is too short and too full of disagreeable things to ever forget one pleasant friend."

In another letter in which he discusses with deep feeling the sacrifice he made in relinquishing the practical work of a physician for the secretaryship of the Board of Health, he writes: "I have always been strongly drawn to a life which will be one to bring me in close relations with individuals needing help." And again, in the same letter, "If people will only place their ideals high enough, they may easily or with a fight make them real. . . . . You know that I am conscientious from sense of duty, if at all, and not, like you, by instinct, and that duty does not come naturally to me, but only after toil and a fight."

The sentiments indicated by these citations point to Dr. Folsom's general characteristics and his plan of life; and the remarkable depth of feeling on the occasion of his death, shared in by the many persons whom he had befriended with his wise counsel and his generous purse, or who had worked side by side with him and knew his efficiency, his intelligence, his fidelity, and his power of accomplishment, is a sufficient warrant that the plan was carried out.

The feeling expressed by the word "loyalty," which underlies the best instincts of the moral life, was a fundamental feature of his character.

[1] The order of the clauses in this sentence have been slightly changed, for greater clearness.

Charles Folsom was born in Haverhill, Massachusetts, April 3, 1842, the fifth of eight children. His father moved to Meadville, Pennsylvania, when Charles was but seven years old, and it was there that his boyhood was mainly spent. The life was simple and uneventful, but his was a case where in the boy could be read in great measure the character of the man. He gained new traits as he grew older, but lost none that were of value. Sweetness and evenness of temper, affectionateness, a strong instinct of helpfulness, untiring industry, skill in the use of brains and hands,—qualities such as these made him universally beloved. "The best boy in school and the foremost in scholarship" was the judgment of his teachers and school-fellows. It is a good test of a boy to be tried as the playmate of his younger sisters, and Charles was held by his an older brother without peer.

Both of his parents were natives of Portsmouth, New Hampshire. The major portion of his ancestors on both sides were of the English race, but the progenitors of the American branches came early to New England, the Folsoms[2] settling in Exeter, New Hampshire, and the Penhallows, whose name his mother bore, in Portsmouth. They were all active, respected people, many of them prominent in public life.

Nathaniel Smith Folsom, Dr. Folsom's father, was graduated one of the foremost in a somewhat notable class at Dartmouth College in 1828. He studied for the ministry at the Andover Theological Seminary, but was soon in the ranks of the Unitarians, and after some years of pastoral work in New England was appointed (in 1849) to a professorship in the Theological School at Meadville. He was a fine classical scholar, high-minded and conscientious. From him, as well as from his mother, Charles inherited the instinct for service to his fellowmen that was so prominent in his nature.

Mrs. Folsom was a woman of rare sweetness and evenness of temper, of fine and strong character, with the fidelity to duty and the steadiness of purpose that had been dominant traits in her family for generations.

[2] The name of the first settler (1638) was written Foulsham.

In 1861 Mr. Folsom resigned the professorship in Meadville, and in 1862 moved to Concord, Massachusetts, where he engaged in teaching. Here the family remained for many years. I recall with pleasure a short visit to them at that place, a cross-country walk with Dr. Folsom, then a medical student, and the impression made upon me by his gentle, quiet manner, his simplicity and his love of nature. But during most of the Concord period he was away from home, at Port Royal, or studying his profession, and before this he was at Exeter Academy and Harvard College, where he was graduated with his class in 1862, the second year of the war.

Dr. Folsom would have enlisted in the army but for the solicitation of his parents. An elder brother was then living in the South and had been drafted into the Confederate ranks, and they could not bear the thought of their two sons meeting upon opposite sides. This brother was heard from once during the war, through a weather-beaten letter which he managed to get smuggled through the lines, and it was afterwards positively ascertained that he had fallen in 1862. Instead of entering the army, Dr. Folsom offered his services to aid in carrying out the newly organized enterprise in behalf of the freedmen at Port Royal, and was sent to the island of St. Helena, where he remained for the next two years. The Port Royal enterprise, so far as the volunteer element in it was concerned, was the outcome of the sense of responsibility for the negroes on the part of Northern sympathizers with the movement of abolition. Dr. Folsom's father was an ardent abolitionist, and this move on his son's part had his warm encouragement; there is some reason, indeed, to think that he suggested it. The story of the movement is well told in a recent book entitled "Letters from Port Royal," edited by Elizabeth Ware Pearson. Early in the war[3] the Sea Islands region of South Carolina, in the neighborhood of Port Royal and Beaufort, became, all of a sudden, untenable for its Southern occupants in consequence of the capture of two forts by Commodore Dupont, and the great plantations there were at once abandoned by their owners, who fled precipitately, leaving behind them several hundred negroes, incapable of caring for them-

[3] L. c. Preface.

selves, and a vast amount of cotton nearly ready for exportation. Not only this, but refugee negroes soon came pouring in, so that the number finally reached several thousand. Cotton agents were sent down by the Government to look after the cotton, and Mr. Edward L. Pierce, of Milton, was placed in charge of the negro problem and of the work of planting next year's crop. Mr. Pierce sought at once the aid of private citizens, at first in Boston, then in New York and Philadelphia. A Freedmen's Aid Society was formed, and very quickly a band of the best people of the North was under way, sufficiently well equipped in money, ability, and ardent devotion to the cause, but destitute of training or experience, to face the problems of "the housekeeper, the teacher, the superintendent of labor, and the landowner," under conditions strange and new. Especially prominent among them was Mr. Edward S. Philbrick, of Boston, but the group comprised many other persons of intelligence and devotion, college graduates and women of the best sort. "For the first time in our history educated Northern men had taken charge of the Southern negro, had learned to know his nature, his status, his history, first-hand, in the cabin and the field. And though subsequently other Southern territory was put into the hands of Northern men and women to manage in much the same fashion, it was not in the nature of things that these conditions should ever be exactly reproduced. The question whether or not the freedman would work without the incentive of the lash was settled once for all by the Port Royal Experiment."

It was a difficult task that was set before this company of willing but untried philanthropists, and it was well done. "Keenly as they felt the past suffering and the present helplessness of the freedmen, they had the supreme common-sense to see that these wrongs could not be righted by any method so simple as that of giving. They saw that what was needed was, not special favor, but even-handed justice. Education, indeed, they would give outright; otherwise they would make the negro as rapidly as possible a part of the economic world, a laborer among other laborers. All that has happened since has only gone to prove how right they were."

It was natural that friendships formed among fellow-workers

under conditions such as these should be warm and lasting, and the small group of men and women of which Charles Folsom formed a member during the two years of their common labors in field and cabin on St. Helena Island remained firmly bound through life. Dr. Folsom's nearest friends were William C. Gannett and Miss Mary E. Rice, with whom he afterwards freely corresponded; Edward W. Hooper, and Charles P. Ware. Mr. Gannett in a recent letter writes as follows: "While we were together in Freedmen's work on St. Helena Island, in 1862-1864, he lived for a long time in our home,—Miss Rice's and mine; I remember well, when the malaria caught me, how he used to sit on my sick bed and tell stories until the room rang with our laughter, and how he journeyed ten or twelve miles to Beaufort and back through the sand just to get me a little ice for the fever."

The Port Royal experience was in some respects a disastrous one for Dr. Folsom, since he there received an accidental gun-shot wound in his arm which caused him a great deal of pain, and in addition contracted malaria and a valvular disease of the heart, both of which troubles are believed to have contributed more or less directly to his death. He also began to suffer from severe neuralgic headaches at about this time, due partly to the shot-gun accident,[4] partly, perhaps, to the malaria, and on this account he was advised by his physician, on his return to Boston, in 1865, to make a long voyage by sea. Following this advice he went around the Horn to San Francisco as passenger on a sailing vessel, and came back before the mast, much improved in health, though not quite relieved of his headaches, which continued to trouble him during his medical studies and even later. He writes to Miss Rice of his experiences on this voyage: "How amused you would have been to see the calm and stately way in which I wash down decks every morning, broom in one hand, water-bucket in the other, in my bare feet, shirt sleeves rolled up to my elbows, pants rolled up to my knees; or could you but see my dignified roll as I cross the main deck, slinging a tar bucket over one shoulder and the grease pot over the other; or the sad

[4] Some of the shot lodged in the scalp, and many, though perhaps not all of them, were extracted some years later.

amble as I pace the deck in the lonely midnight watch, chanting the 'Gideonite's Lament' or 'Katie's gone to Roxbury.' I am exceedingly glad that I took the trip, and especially that I returned a tarry sailor as I did. It gave me insight into a new phase of life, and I am sure the benefit has been greater than if I had come back a passenger." Mr. Gannett recalls the following incident, important for our purpose: "A sailor fell from aloft, and broke himself all to pieces so hopelessly that they left him in a huddle to die. Folsom[5] could not stand that, went to work with what knowledge he had, patched him together as well as he could, nursed him, and brought him through alive to New York." This was, as Mr. Gannett says, "his first case," and a worthy one.

In 1866 Charles Folsom decided, after some hesitation, to study medicine. A small and favored portion of the would-be medical students of that period used to spend a few months in taking a preliminary course of Comparative Anatomy under Professor Jeffries Wyman. Dr. Folsom and I took this course together, and vividly do I remember our first meeting. I can see myself lingering about, on a summer morning, in the cool hall-way of Boylston Hall, where Professor Wyman's laboratory lay, watching the door swing open and observing the tall figure of Charles Folsom enter. I well recall his boyish yet thoughtful and intelligent expression, his pleasant smile, his light hair and sunburnt face, and his plain suit of homespun gray. We were entire strangers to each other then, but on the moment a bond of mutual sympathy was established and we became good friends. Professor Wyman, that rare man and teacher whom every one admired, loved, and trusted, soon recognized Dr. Folsom's ability and worth, and secured for him, a few years later, the Curatorship of the Natural History Museum, a position which he occupied for several years and abandoned with regret.

Between 1866 and 1869 came medical studies, diversified by half a year's tutoring in Charlestown, New Hampshire, which secured him some pleasant acquaintances and a gain in health, though it was felt as a somewhat rasping interruption to his work.

[5] Not yet a medical student.

The old custom of supplementing one's class-room studies by serving as assistant in the private office of an established practitioner (even during the medical course) was still followed, to some extent, at that period, and in this way Dr. Folsom made, in 1868, the highly valued acquaintance of Dr. H. I. Bowditch. In a letter to Mr. Gannett, written in October of that year, he says: "Dr. Bowditch is simply splendid. He is one of the purest-minded men I ever knew, and the opportunities for study are very great." I had the privilege of following Dr. Folsom at this task and can warmly testify to its value. The duty of the assistant was to receive the patients in an anteroom of the delightful study at the house on Boylston Street, make full notes of their histories, which were to be submitted afterwards to close scrutiny, and a preliminary diagnosis. Then came the physical examination by Dr. Bowditch, at which the student was often invited to assist, and the frank comments of one of the best men and best physicians of his day. It was "section teaching" in its best form. Dr. Folsom's admiration for Dr. Bowditch was so great and the understanding between them became so fine, that the friendship then established proved one of the great forces in Dr. Folsom's life. There was some question in the next year (1869) whether he should become assistant at the City Hospital or at the Massachusetts General, for which he first applied. It was to the former that he went, and he found reason to congratulate himself for so doing, largely because it brought him again under Dr. Bowditch. It was not alone admiration for Dr. Bowditch's qualities as a man that drew his younger friend so strongly, but similarity in sentiment and opinion, likewise. Both of them had grown up in the atmosphere of abolitionism, and Dr. Bowditch's ardent advocacy, both of that cause and of the natural right of women to do what nature fitted them to do, and especially to practice medicine if they wished, was met with quick and active sympathy on Dr. Folsom's part. In later years his cautious and conservative traits came more prominently forward, but the sentiments by which he was mainly moved were always those of unconventionality and freedom.

He strongly advocated the plan of putting a woman physician on the medical board of Danvers Hospital, and took an active

part in furthering the admission of women to Johns Hopkins Medical School. In the bibliography which follows this paper a reference will be found to an address of his upon this latter subject.

The service at the City Hospital came to an end in the spring of 1870. As soon as it was over Dr. Folsom opened an office on Leverett Street and engaged in private practice, while at the same time he became physician to the Massachusetts Infant Asylum, then recently established. He was for a short time connected also with the Carney Hospital. At these tasks he remained until the spring of 1872, when he obtained a much desired position as assistant at the McLean Asylum, then in the old familiar grounds at Somerville, and this he kept until the autumn of 1873. He threw himself, indeed, at this period, with great energy into the study of diseases of the mind, and came near to selecting this branch of medicine for his life work. Even as late as 1877 he writes to Mr. Gannett: "The bill has passed the Legislature requiring the Governor to appoint trustees, etc., to Danvers, and the question has been asked me square, whether I w'd be Supt. Although I said no more in reply than that I would *not* say no, I have since decided not to take it, and very largely because ——, who knows me for generations back, has convinced me that I am in many respects unsuited for that kind of work."

In the autumn of 1873 he went abroad for the sake of "seeing what asylums are there, etc." He was away about a year, studying mainly in Vienna and Berlin, but visiting also the hospitals of England and of Scotland and making valuable acquaintances. The full letters from Europe during this period (1873-1874), both to the various members of his family and to Mr. Gannett, show sound observation and an active mind. He found the English asylums the best, though by no means above criticism. The brutal manners of the Viennese doctors towards the poorer patients disgusted him, but did not prevent him from appreciating the splendid opportunities of these physicians for study nor their quality as teachers. Man for man he liked his own countrymen the best.

While he was still away an event occurred which proved to be

for him of great significance. This was his selection for the secretaryship of the Massachusetts State Board of Health, just then thrown open by the regretted death of Dr. George Derby, a position in which an able physician could do more for the health of his fellow-citizens than in any other way whatever. The State Board of Health had then been in existence just four years. It had owed its life to the imagination and splendid zeal of Dr. Bowditch, and its remarkable development and career of usefulness at once to his labors and those of his public-spirited and able colleagues, and to the energy and spirit of Dr. Derby, fresh from service as army surgeon in the war and full of interest in matters relating to the public health. The Board as a whole was one of the best that ever served the State. Dr. Bowditch had been chairman from the first, and when the question came up of the appointment of a successor to Dr. Derby it was natural that his thoughts should turn to Dr. Folsom, young, free, of approved character and ability, and possessed already of experience in administrative work.[6] Dr. Derby died in June, 1874, and Dr. Folsom was appointed on September 12 of the same year, the gap of four months having been filled by Dr. F. W. Draper. The members of the Board at this time, besides Dr. Bowditch, were J. C. Hoadley, C. E.; David L. Webster, Richard Frothingham, Robert T. Davis, M. D., and T. B. Newhall. These same members served until 1879, when the departments of health, lunacy and charity were combined and Dr. Folsom was chosen secretary of the united Board.

[6] Dr. Bowditch's personal friendship for Dr. Folsom is testified to by the following note, evidently written at a period when observers had had a chance to realize the quality of the new secretary. Friends of Dr. Bowditch will be reminded by it of the generous warmth which he threw alike into his friendships and his public work.

"Boston, June 25.

"My dear Dr., — I send by mail the Advertiser of to-day. I felt my heart almost jump as I read the fine compliment paid to you my dear Dr. in the editorial. I certainly echo the wish that you may long continue to occupy the position in which you are growing, not only in yourself, but in the estimation and love of the community. God be praised that you dropped a letter to me from Europe "just in the nick of time." . . .

"Faithfully yours,

"H. I. B."

Dr. Folsom believed that in accepting the appointment as secretary of the State Board of Health he was shaping his life-work, and in the letter to Mr. Gannett, above cited, he continues: "Of course, you can never appreciate the disappointment it cost me to give up the practice of medicine. It seemed like having in my palm something for which I had bent every energy for a dozen years, and then calmly throwing it away, and the silly *hankering* took shape in Danvers as the only practicable form; but that is now gone, like all my other buried hopes at which I can now smile and joke."

The occupations of the conscientious secretary of such a board as this, certainly of this board, are but faintly indicated in his title. His duties cannot all be specified in detail and he does much that passes unrecorded. Besides his labors as recording and executive officer, nothing goes on that does not pass his judgment, feel his touch, receive his contribution. He is the nucleus of the busy cell. The reports are in great part his work, and it is a striking tribute to Dr. Folsom's industry and ability that the volume which was issued on the first of January, 1875, only three months after his appointment, was not only ready at the proper time, but contained a long article by him, implying careful study, upon the meat supply of our cities, with suggestions for its improvement. One of the most important among the numerous and manifold secretary's jobs, and a task that called for good feeling, tact, and judgment of a high order, as well as for firmness and intelligence, was that of going about as inspector, critic, and adviser among the various towns and villages of the State, in the interests of sanitary reform. It was after one of these trips, in November, 1877, that the North Adams *Transcript* published a long editorial, impressive with figures and with facts, the opening paragraphs of which here follow:

"As stated in a previous issue, Dr. Charles F. Folsom, Secretary of the State Board of Health, recently visited our village for the purpose of making a thorough investigation into its sanitary condition. For the limited time which he spent here, his work has been remarkably thorough, and the results of his examination, which we publish in full, are of a nature calculated

to startle our citizens and awaken a profound interest in an important and heretofore neglected subject."

The investigations with which Dr. Folsom became especially identified (besides the question of meat-supply, above referred to) in the five years that followed his appointment, related to water-supply and the disposal of sewage, vital statistics, and his old love,—diseases of the mind. On these vast problems he made himself an expert, so far as this could be done without actual laboratory work. For this he was not trained, but what he did and what his mental constitution admirably fitted him to do was to scrutinize and estimate and contrast and afterward to summarize the work of other men, in Europe and at home, and then intelligently to form a plan suited for Massachusetts and for Boston. One reason why the work of the State Board at the period of Dr. Folsom's service was so largely given up to questions of water-supply and drainage and the disposal of sewage was that these subjects had begun to attract the public interest in a high degree. This led to legislation by the State authorities and permission to employ experts, the results of whose investigations are given in the successive annual reports. In these inquiries the City of Boston took an active part, and the problem of its sewerage was studied in 1875-1876 by a special commission, consisting of E. S. Cheesborough and Moses Lane as representing the department of civil engineering, and Dr. Folsom as standing for the interests of the public health. This commission was appointed by the city government in February, 1875, only a few months after the nomination of Dr. Folsom to the position of Secretary to the State Board of Health, and the choice of him as a member may therefore be considered as a recognition of his merits. The commission was called on to consider, one by one, a series of important practical problems relating to the sewerage system of the city and the modes by which it could be bettered. One portion of the investigation consisted in a study of the methods of dealing with the sewage-waste adopted in other cities of America and Europe and the experiments in utilizing it through irrigation-farms. The investigation of these matters necessitated another trip to Europe on Dr. Folsom's part (in 1875), during which the material was collected

which was published as an appendix to the report of the commission. The plan recommended in this report was, as is well known, the building of the great system of the Metropolitan intercepting-sewer for that portion of the city lying on the south side of the Charles River, with pumping stations at Moon Island, discharging on ebb-tide into the bay. Dr. Folsom afterwards appeared before the Joint Committee on Improved Sewerage and presented an elaborate defence and explanation of this plan, contrasting it with that offered by the Superintendent of Sewers, which he admitted to be cheaper but believed to represent a false economy. The plan advised by the commission was finally adopted, and was carried out, and has proved, in many ways, remarkably successful. The same principle was applied later to the north side. The preliminary investigation had been thorough, the reasoning based on it was convincing, and the conclusions were conservative and sound. Besides contributing to the able and impressive reports made by this commission and by the State Board of Health, with all their many maps and tables, Dr. Folsom read a paper before the American Statistical Association, in April, 1877, in which the sewage-farm question in particular was discussed, on the basis of a remarkable amount of knowledge and of judgment. Other communications on this and kindred subjects had appeared in the *Boston Medical and Surgical Journal* in the form of letters written during his trip abroad.

As soon as the work of the board with reference to water-supply and drainage began to relax, Dr. Folsom turned his attention again to the duties of the State with relation to insanity and to the general question of the treatment of the insane. In 1877 he published the long article on this subject entitled "Diseases of the Mind," which was republished in book form. This excellent monograph reviews the history of the treatment of insane patients from the earliest times, and describes with accuracy what was being done and what was being planned in all the great institutions of Europe and America. It tells a striking and highly interesting story. The materials for this work had been collected partly during his visit to Europe in 1875, when he had industriously visited asylums and formed the acquaintance of several prominent alienists, especially in England. With him

acquaintance was more than apt to ripen into friendship, and such was the case as regards his relationship to Dr. T. S. Clouston, of Edinburgh, perhaps the leading alienist of Great Britain at that day, and a man of warm and fine personal qualities which attracted Dr. Folsom strongly. The friendship between them was strengthened by subsequent visits to Edinburgh on Dr. Folsom's part and a visit by Dr. Clouston to America. Several of Dr. Folsom's patients spent some time at the pleasant institution of Morningside, under Dr. Clouston's care.

It was within a year after the publication of this paper that Dr. Folsom was offered and declined the superintendency of Danvers Hospital, as above described.

The work of the State Board of Health, extensive as it was, did not prevent him, at this period, from giving a certain amount of time to private practice, especially among the insane, nor from lecturing at the Harvard Medical School. His connection with this school began in 1877 and continued until 1888. He served first as lecturer on hygiene, then gave instruction in both hygiene and mental diseases, and finally became assistant professor of Mental Diseases. His resignation was prompted partly by the lack of proper clinical facilities for teaching, partly by the fact that he had finally decided to withdraw from the exclusive study of diseases of the mind and to devote himself to the work of a general practitioner and consultant. But this is to anticipate, as we still have several interesting years of public work to chronicle.

I have sketched the principal features of his labors as Secretary of the State Board of Health as far as 1879. In that year two events of importance for him occurred, namely, the appointment of the Yellow Fever Commission, of which he was made a member, and the submerging of the Board of Health in the combined Board of Health, Lunacy, and Charity, of which he was appointed secretary, and of which he was made a member in the following year.

The yellow fever epidemic of 1879-1880 ravaged several of the Southern States, especially those bordering on the Mississippi River, and the National Advisory Commission was appointed to inspect the infected districts and consult with local authorities and officers of public health. As a member of this commission

Dr. Folsom visited a number of Southern cities, especially Memphis and New Orleans, and left behind him a pleasant impression of tact, judgment, and good breeding, of which Dr. H. P. Walcott, Dr. Folsom's successor on the Board of Health, still found traces on the occasion of a visit, many years later, to the same localities. The most important result of the trip for Dr. Folsom himself was, however, that it brought him into close contact with Dr. John S. Billings, and laid the basis for one of those enduring friendships in which he was so rich.[7] This same outbreak of yellow fever formed the occasion for the establishment of the National Board of Health, and of this Dr. Billings and Dr. H. I. Bowditch were appointed members. There were thus several ties that bound Dr. Folsom's interest to the work of this important board, and it was only natural that on Dr. Bowditch's retirement, in 1882, Dr. Folsom should be chosen his successor. The work of the board by that time, to be sure, was already waning under the inanition treatment to which it was subjected by the Government at Washington, and in the few remaining years of its life it did but little active work. Nevertheless, it served to cement still closer the bond of friendship between Dr. Folsom and Dr. Billings, and also brought the former into wider notice among public men.

The absorption of the Board of Health into the combined Board of Health, Lunacy, and Charity, was a matter of profound regret to Dr. Folsom as to Dr. Bowditch, and to all their colleagues. They felt that the co-operative effectiveness of the small group of men who had learned to work so well together was likely to be impaired, and with no compensating benefit. Dr. Bowditch who was appointed on the new board, resigned almost at once, partly to gain more time for other labors, partly as a means of expressing his disapproval. Dr. Folsom was made secretary of the new board, at first with special duties relative to the health department, but resigned in January, 1881,

[7] In a recent letter Dr. Billings writes: "From my first acquaintance with him I had the greatest respect for his judgment, and the frank honesty of the way he gave it, and as we became intimately associated the friendship grew into a warm affection which continued to the end. He was a model citizen, giving time and skilled labor to public interests without a thought of personal benefit—a skilled physician, beloved by his patients, and a gentleman in all the best senses of that word. I am proud of the fact that he was my friend."

just a year after Dr. Bowditch. He had identified himself with many of the important measures that were adopted by the board during his brief term of service, and lent his aid to carry into effect a scheme which then, perhaps, seemed to most onlookers to be of much less consequence than it later proved. This was the appointment by the State Board of carefully selected women, from the different towns throughout the State, to act as "Auxiliary Visitors" to the State Board of Health, Lunacy, and Charity, in looking after the girls from the State Primary School at Monson, and the State Industrial School at Lancaster, as well as those committed to the custody of the board itself and placed out with relatives or in other families, while still remaining wards of the State. The appointment of these visitors increased very materially the value of the board's work in that direction. Similar work had been going on for some years, on a small scale, as an informal outgrowth of the efforts of a few women who had been assisting Colonel Gardiner Tufts, Superintendent of the State Visiting Agency, but it was of great importance to have the system adopted by the State Board, its value recognized, and its work established on a larger scale.

Besides serving on the State Board Dr. Folsom gave much time during the early eighties to the Danvers Lunatic Hospital, in the establishment of which he had been greatly interested, and of which he had been made trustee. In 1881 he read an excellent paper entitled "The Management of the Insane," before the Hospital Trustees Association, discussing and forecasting the conditions needed to make a hospital fulfil its possibilities of efficiency. As usual, practical good sense, thorough information and earnest desire for reform inspire its pages, on one of which he refers to his studies made during five visits in different years to Great Britain. Another paper, on "The Relation of the State to the Insane," was read at the American Medical Association this same year.

In the following year, 1882, occurred the trial of Guiteau for the assassination of President Garfield, followed by his condemnation and execution, notwithstanding the protest of a large number of the best physicians of the country. Dr. Folsom took part in the public discussion of the merits of this case, and in so doing revived an interest in medical jurisprudence which had

expressed itself, even in 1875, in a paper entitled "Limited Responsibility: a Discussion of the Pomeroy Case," in 1877 by an article on "Medical Jurisprudence in New York," and in 1880 by an account of "Cases of Insanity and of Fanaticism," devoted mainly to the remarkably interesting case of Freeman, the religious fanatic of the quiet village of Pocasset on Cape Cod, who had killed a favorite child under a supposed Divine command. The study of such borderland cases, involving questions of moral and of legal responsibility, continued, indeed, to interest him throughout his life, and it is well known to his friends that he analyzed with extreme care, through several years, the data in the noted case of Jane Toppan. Pomeroy and Jane Toppan he believed to be essentially criminals, Guiteau insane. Freeman he rightly judged a crank of the fanatic type, a product of his environment, and only technically insane. He kept close watch of Freeman from the beginning onward, was instrumental in securing his release on probation from the asylum in which he was confined, and rejoiced at the continued reports of his subsequent good behavior, which have continued to come in even to the present day.

In 1881 Dr. Folsom was appointed physician to out-patients at the Boston City Hospital, and in 1886 he took charge, as visiting physician, of the ward for nervous and renal diseases, which had been established in 1877 at the request of Dr. R. T. Edes, and of which Dr. Edes and Dr. S. G. Weber had been the first physicians. This ward had been devoted partly to nervous and partly to renal diseases, but even thus it was the first neurological ward to be established in Boston, and would stand, if it still existed, as the only department in a public institution of this city, with the exception of the Long Island Hospital, where disorders of the nervous system could be systematically and adequately taught and studied under expert supervision. In the year following Dr. Folsom's appointment this ward was given over, to the great sorrow of onlooking neurologists, to the general purposes of the hospital. At the same time Dr. Folsom became a member of the regular visiting staff, and at about the same period made a strong and indeed successful effort to change the character of his private and consulting practice to that of an "internist" or general practitioner.

In 1882 Dr. Folsom was appointed consulting physician to the Adams Nervine Asylum.

In 1886, while still especially interested in nervous diseases, he delivered six lectures on school hygiene,[8] one of which, "On the Relation of our Public Schools to the Disorders of the Nervous System," was reprinted for distribution. This sort of task, in which his twofold instincts and training, as a hygienist and as a neurologist, were to be enlisted in the practical service of a concrete set of public needs, was a congenial one to him and was always well performed.

In the next year (1887) he took part in the discussion of another topic of public interest, namely, whether the State should establish a hospital for dipsomaniacs. To this plan he was opposed.

This is perhaps the proper place to mention that Dr. Folsom had been warmly interested for many years in the question of the proper treatment of prostitution. He studied this subject diligently, at home and abroad, and wrote his views upon it at length to Mr. Gannett. Unfortunately, he did not publish them, and it would perhaps be unjust to consider them as final. They are, however, of interest as an example of his habitual generosity of sentiment. Like the majority of cultivated men, and especially those who have labored practically in the harness of organized progress, Dr. Folsom was conservative and inclined to see two sides to every proposition. On the other hand, he was by inheritance and by temperament a reformer, a hater of injustice, of oppression, and of immorality. These sometimes conflicting tendencies were all drawn upon in his studies into the question of prostitution. Whatever is to be said of the varied influences and motives at work, the observation of those who fall, he writes, "increases one's admiration for those many persons in all stations of life who lead lives of purity and nobleness, and to whom trial and temptation only give added purity and strength. If people will only place their ideals high enough, they easily or with a fight may make them real. —— does not believe this, but I know it."

[8] Given before the teachers in the public schools, under the auspices of the Massachusetts Emergency and Hygiene Association.

In the spring of 1886 Dr. Folsom was married to Martha Tucker Washburn, sister of his classmate, William T. Washburn, and this fortunate event filled with happiness and serenity the whole remainder of his life. Domestic, affectionate, home-loving, and hospitable, his marriage brought to him as much fulness of satisfaction as any of his friends could have desired. It gave new scope, too, to his hospitality and his strong social instincts, for these traits were eminently characteristic of his wife also, and their table became well known as one where good talk, good fellowship, and good humor in the best sense were to be found. Dr. Folsom had had a wide experience with men, with books, and with affairs; he had a good memory, a good sense of humor, a fondness for a good story, and the capacity to tell one, and these characteristics, combined with his real love for his fellow-men, made him a highly acceptable companion.

For a number of years he had been very busy in his private practice, and his marriage only increased his zeal in this respect and his opportunities for conducting his work as he desired. To an unusual degree he treated his patients as his friends and made them welcome visitors at his house. This tendency, which was instinctive with him and formed a part of his desire to lead a life which should bring him into close contact "with individuals needing help," was thoroughly sympathized in and actively forwarded by his wife, and materially increased his power for good.

As a diagnostician and practitioner Dr. Folsom was a careful, accurate observer, sound and conservative in judgment and resourceful in meeting practical needs, and it was these qualities, rather than an ability and instinct for scientific investigation, that brought him his success. His contributions to what might be called pure science were in fact not numerous, and became less so as time went on. It was always the vision of "the individuals needing help" that led him on. The worrying habit might readily have developed itself in him, but he systematically discouraged this tendency and opposed to it a simple and gentle philosophy of living which methodical, well-ordered habits aided to make effective. Generosity was a constant trait throughout his life, and for nearly twenty years he contributed substantially to the support of a brother who was ill, and even to the very last to the

education of nieces and nephews. That it was a joy to him to do this, as it had been to contribute to the comfort of his parents' declining years, is shown by the following extract from a letter written in 1901: "Just now I am sending two nieces to school and a nephew to college, and hiring an outside man for my brother, who is ill. Many of the other things I do not care for, it is such a pleasure and such a privilege to do these." His sister writes: "What he was to us all as counsellor couldn't well be told—it includes a much wider family circle of cousins and broadens into the same service for patients and friends."

Dr. Folsom's public services did not cease with his resignation from the State Board. In 1891 he was chosen overseer of Harvard College, and to this important post he was repeatedly reelected, until he had served twelve years. In the spring of 1896 he was one of the commission appointed by the Governor and Council "to investigate the public charitable and reformatory interests and institutions of the Commonwealth; to inquire into the expediency of revising the system of administering the same, and of revising all existing laws in regard to pauperism and insanity, including all laws relating to pauper settlements," etc. The other members of this commission were Mr. William F. Wharton and Professor Davis R. Dewey. Their report, covering a hundred printed pages, was submitted in February, 1897. In 1901 he was offered—so his letters show—the chairmanship of the State Board of Lunacy, but decided to decline this tempting offer. "Think," he writes, "of following in Dr. Howe's footsteps with twice as big a field." In 1903 he was selected as President of the Harvard Medical School Alumni Association. Truly, a rare list of honors and opportunities for service.

As early as 1898 Dr. Folsom resigned his position as visiting physician to the Boston City Hospital,[9] "long before his useful-

[9] The whole period of Dr. Folsom's active work in connection with the City Hospital, not including his service as assistant, was from December, 1881, to the time of his resignation in 1898. He was first appointed Physician to Out-Patients (December, 1881), then Physician to Out-Patients with Diseases of the Nervous System (November, 1882), then Visiting Physician to Patients with Diseases of the Nervous System (September, 1885), and finally member of the general visiting staff (December, 1886). After his resignation in 1898, he was appointed Consulting Physician in 1901.

ness to the institution began to wane," a colleague writes,[10] and although he was chosen consulting physician in 1901, this appointment was one rather of honor than of active service. The fact was, as many of his friends observed, that Dr. Folsom's policy for several years before his last visit to Europe had been to withdraw from unnecessary labors, not on account of obvious ill health, and surely not from indolence, but from prudence. In 1899 his horse fell with him, and this accident cost him a broken rib and an attack of pleurisy, and marks the period subsequent to which his strength and power of work were never quite what they had been before. In 1901 he writes to Mr. Gannett: "I am sorry that I did not write to —— oftener and to you and to —— and that I do not do a lot of extra things in the way of work of all kinds and of social duties and pleasures. But I discovered some time ago that there was not enough of me to go around. Starting in debt and having something to do for others all the time, one has to be economical of his strength if he is going to practise medicine."

Many men would have met this need of economy of strength by longer and more frequent holidays than he took. But, fond as he was of the country, of travel, of new friends, his habit of long years had been to husband his strength by careful living, and not to separate himself far or for long from his patients and his desk. Perhaps he knew himself better than his advisers knew him when he chose this mode of life, or accepted it as a satisfactory one when it seemed forced upon him by his duties. His recreation lay in friendly intercourse, in horseback riding, and, of late years, in absences of short duration at Little Boar's Head, New Hampshire, where he and his wife, with several friends, spent a number of consecutive summers. The final visit to Europe, which at best was to have been of but two months duration, was looked forward to by both his wife and himself with the greater pleasure for the fact that it had been so long postponed. He was pretty well tired before starting, but in essential ways had seemed as well and as serene as common. Perhaps, in fact, he felt less well than he admitted. At any rate, even on the passage outward, he seemed poorly, and

[10] Editorial, Boston Medical and Surgical Journal, August 29, 1907.

when in England a constant though slight fever set in and he was unable to obtain the expected pleasure from the visits and excursions that he made. While in London he consulted physicians, among them Sir Lauder Brunton and Sir Almroth Wright, but without avail. During the voyage homeward his fever increased to a high point and he became delirious. On arriving in New York he was taken to the Roosevelt Hospital and carefully tended by Dr. Walter B. James. Here he lay for several weeks, at times improving slightly, at times worse again, but on the whole gradually losing ground. Much of the time his mind wandered a little, but it was striking to note how fully he retained his characteristic patience and his unmurmuring readiness to accept results, whatever they might be. Perhaps he felt sure from the first that he should not get well, and certainly he once said that he knew he was approaching his end, and that "the clock had struck twelve"; but this may be taken rather as a temperamental note of acquiescence than as a conclusion based on evidence. He died at last quietly and without pain.

The examination showed that he had been suffering from an ulcerative, infective endocarditis, with embolisms, to which it was thought his old valvular heart-disease had rendered him susceptible.

It would be easy to multiply testimonials to the character and ability of Dr. Folsom from the words—spoken, written, or printed—of his colleagues and his friends. Perhaps, however, the most fitting close to this brief sketch is given in the final paragraphs of a private letter from Mr. Gannett, who was the oldest and probably the closest of Dr. Folsom's friends. After referring to the fact that at each new meeting following a long interval of separation he found him always "hard at work, the same loyal friend, simple, modest, gentle, highminded, lovable . . . . yet growing in power and in service, . . . ." Mr. Gannett goes on to say, "It is strange how well one can know a man's self while knowing so little of his works and days. The reason, no doubt, lies in the same loyalty,—he was loyal to himself; through his growth and success he remained the same man I knew in our youth. I was always grateful for his holding on to me, and counted it an honor. And it seems so easy to hold on to *him*

now for the same reason,—now when his greeting no longer waits me in Boston. I happened yesterday to be looking up something about George William Curtis, and came across what Mr. Roosevelt—not yet even Governor—said of him at some club in New York City, not long after his death. He spoke of the serene purity and goodness of character which impressed every one who came in contact with Curtis,—and then said, 'I have used the adjective *serene,* it is a beautiful adjective, and it is the only adjective I know of which is sufficiently beautiful to describe his beautiful character.' I think of Folsom in that way,—the adjective and the noun, and the whole expression apply well to him."

A testimonial of another form deserves especial mention. A large number, nearly seventy, of his friends and patients, "who wished in this way to express their grateful appreciation of Dr. Folsom's unfailing care and skill as a physician, and their admiration for him as a man" (Harvard Bulletin, March 4, 1908), presented Harvard University with a fund of ten thousand dollars for the establishment in the Harvard Medical School of "The Charles Follen Folsom Teaching Fellowship," in Hygiene or in Mental and Nervous Diseases. The issue of the Bulletin in which this gift was anounced contains also an editorial upon Dr. Folsom which concludes as follows: "But it was not as an authority on public health and on mental and nervous diseases or as a college officer that his former patients and colleagues have sought to perpetuate his name in an institution which he loved so well. It was as a friend, perhaps as a host to whom entertaining was a fine art, that they knew him. Wise, firm, kind, and indefatigable, he rarely departed from a sick-room without leaving his patient stronger in mind, if not in body. His constant thoughtfulness of his charges, in health as in illness, was unending, and many a patient owes a sound mind and a sound body to Charles Folsom's sagacity, skill, and loving care. Indeed, it may be said of him more truly than of many physicians and of most men that he was like 'rivers of water in a dry place and the shadow of a great rock in a weary land.'"

JAMES J. PUTNAM.

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## SOCIETIES OF WHICH DR. FOLSOM WAS A MEMBER BESIDES THOSE MENTIONED IN THE TEXT.

Association of American Physicians. Original Member; later, Hon. Member.
American Medical Association.
American Medico-Psychological Association.
Massachusetts Medical Society.
Massachusetts Medico-Legal Society.
Suffolk District Medical Society.
Society of Psychiatry and Neurology.
Boston Society of Medical Improvement.
American Academy of Arts and Sciences.
American Statistical Association.
American Social Science Association.
American Association for the Advancement of Science.
National Geographical Society.
Boston Society of Natural History.
Reading Masters Society.
St. Botolph Club.

## DR. JOHN PEASLEE BROWN.

### 1833-1908.

Dr. John Peaslee Brown, on September 19, 1908, at the home of his only daughter, in Springfield, Mass., quietly passed into the future. He was born in Raymond, N. H., October 12, 1833, the son of Jonathan Brown and Hannah Heath Brown.

The first representative of the family in this country was John Brown from England, who settled in Hampton, N. H., in 1639.

Of old colonial stock, the backbone of England's sturdy manhood, Dr. Brown received as his heritage sterling qualities of heart and brain. He did not, however, inherit the rugged, robust physique that generally accompanies these qualities. His health was always delicate. His father was a man of upright integrity, possessing the iron will and indomitable persistence that always command respect. His mother was one of those rare souls whose sweetness of disposition and beauty of character win the hearts of all. She died when he was 10 years of age. From his father he inherited strength of character, from his mother delicate sensibilities and love of books.

His early life was that of most farmers' boys of the period. He was one of eight children; the family farm was not large; it provided them with all necessities but could not supply luxuries. When very young he expressed a strong desire for an education and a determination to go to college. His father was unable to afford him the means, and rather discouraged him from attempting it on account of his delicate health. He, however, was determined and persevered. To start with, he borrowed money from the neighboring farmers, $25 here and $50 there.

To anyone who is familiar with the thrift of the New Hampshire farmer, and knows with what difficulty those small sums of money had been accumulated, the fact that they were willing to lend them to young Brown without security speaks volumes for his standing in the community. In after years Dr. Brown was heard to say that he experienced the greatest pleasure of his life in paying back those small loans.

He commenced teaching school at the early age of 17 years, and worked on the farm in the summers and taught school in the winters all through his preparatory and collegiate course. He prepared for college at Phillips Andover Academy.

He graduated from Dartmouth in 1860 with credit, a high-minded, purposeful young man, and still handicapped by a frail body and delicate health, teaching and working on the farm, he struggled on.

Immediately after graduation he went to Louisiana as tutor in a planter's family. The breaking out of the war compelled him to return North. In this connection it may be of interest to note that his two pupils, the planter's sons, fought through the war in the Southern army, and taking up life anew after the war, both became successful business men. But they never forgot their old master, and in later years corresponded with him with mutual pleasure and satisfaction. After his return from the South he took up the study of medicine, paying his way by teaching, and graduated from Harvard Medical School in 1865.

After graduation he was appointed assistant physician in the New Hampshire State Hospital, Dr. J. P. Bancroft being superintendent, thus beginning what was destined to be his life work. This same year he married Caroline A. Stevens of Mt. Vernon, New Hampshire.

Dr. C. P. Bancroft, the present superintendent and life-long friend of Dr. Brown, thus writes of his career in that institution:

Dr. Brown came to the State Hospital in April, 1865, and served continuously until March 1, 1878, when he resigned to accept the superintendency of the Taunton Hospital. During the time he was here he acted as assistant superintendent; and once during that period for nearly a year, while Dr. J. P. Bancroft was absent in Europe, he acted as superintendent. Dr. Brown made an enduring reputation for himself in New Hampshire, and this he did in an entirely quiet and unostentatious way by simply performing most efficiently the duties which fell upon him. His patients became greatly attached to him, and long after his resignation his memory lingered with the patients to whom he had ministered. Among patients and employees at the Concord Hospital he acquired the reputation of being an eminently just and sincere man, and all came to know that under his quiet, almost reserved manner there beat a warm, sympathetic heart. The senior Dr. Bancroft entertained for him the most profound regard. Dr. Brown's management of the hospital and its affairs during the absence of Dr. Bancroft in Europe disclosed the possession of rare administrative

qualities. In the report of the New Hampshire State Hospital published in May, 1878, the superintendent says that "Dr. Brown left with an established reputation earned by general culture, extensive information, and ample experience."

It is interesting to note in this connection that the senior Dr. Bancroft, while recommending Dr. Brown highly in every respect, felt it his duty to warn the trustees of the Taunton Insane Hospital that his tenure of office would probably be a short one on account of his delicate health. This prophecy was not fulfilled, for Dr. Brown held the office for over 28 years.

When he took up the duties of the office in 1878 his life work may be said to have begun, what he had previously done being simply preparatory to the larger and more complete work. To develop and improve the efficiency of his institution, to raise the standard of care, improve methods of treatment and in every possible way to promote the health and comfort of those under his care, became not merely his life work, but his life itself. At the end of his service the hospital, within and without, in administration, organization, aims, and aspirations, was as he, and he alone, had made it, and when he finally felt it his duty to lay down the burden that advancing years and increasing ill health had made too heavy, he felt that his life's work was done, that his life was ended.

He was excellently equipped for his work. He brought to it, in addition to his ability as organizer, administrator, and disciplinarian, sound judgment, rare tact, accurate knowledge of general medicine and psychiatry, together with the ability to think along comprehensive lines and to deal with large subjects. He was an omnivorous reader and a ripe scholar.

His knowledge of men was marvelous; he was seldom deceived, and his analysis and estimate of the characters of those around him was very accurate. The after life of his assistant physicians, in most cases, approximated quite closely to the judgment he had formed of them. Always dignified and reserved in bearing, his frankness, sincerity, and kindness of heart won the respect and affection of all classes. Though trained in the older traditions of his specialty, he observed closely the trend of the times, and was quick to inaugurate any change or reform that seemed called for. Often the first, ever among the first, he was never

last. Between him and his trustees there ever existed perfect confidence and oneness of purpose and action, and his entire administration was marked by fidelity on his part and perfect confidence on theirs.

In accepting his resignation, the trustees expressed themselves in part as follows:

> The utmost confidence has existed between Dr. Brown and the trustees from the beginning to the end of his administration. His ripe judgment, quick insight into the growing needs of the hospital insane and adoption of the most approved means of developing the institution to meet them, as well as his native talent for quiet, effective organization and management, soon established his rank as a hospital administrator of the first order, which he has maintained to the close of an unusually long official career. His equable and cheerful nature, calmness and patience, firmness and gentleness have been reflected in his influence in dealing with the patients; and he brought to the work not only the highest professional skill, but a sympathy and tenderness of heart which enabled him to do everything that was possible for their comfort and the amelioration of their sufferings in mind and body. His thoughtfulness and consideration have always made the work of the trustees a pleasant and agreeable duty.

His social world, both by taste and necessity, was confined to his domestic hearth and a small circle of tried and true friends of long standing. His reserve masked the humorous soul beneath, but to those privileged to observe him on those rare occasions when he laid it aside, the twinkle of the eye, the genial smile, and the quiet but infectious laugh revealed the fund of humor beneath that placid exterior which also concealed a pungent wit and biting sarcasm that few cared to encounter.

He was a member and generous supporter of the Congregational Church, and all his life was much interested in religious matters; but his thought was as broad along religious as along general lines, and he had little sympathy with or liking for formal creeds. Once when asked, "What creed should the church require?" he answered without hesitation, "The church should receive all who accept the ethical teachings of Christ."

During the last two or three years of his service his health failed steadily. He was able to carry on his work, but acute attacks of sickness that confined him to his rooms for days and weeks came more frequently and were more severe. The sudden death of Mrs. Brown in August, 1906, was a blow from which

he never recovered, and three months later he retired to private life.

He could only rest, however, when at work, and his health still failing, he longed for the end, which came to him quietly when sleeping, as he had always desired.

ARTHUR V. GOSS.

TAUNTON, MASS., May 1, 1909.

## DR. DANIEL ROBERTS BROWER.

Dr. Daniel Roberts Brower died at his home in Chicago March 1, from cerebral hemorrhage, age sixty-nine. He was born in Philadelphia and graduated from the Philadelphia Polytechnic College in 1860 with the degree of M. S., and from the medical department of the Georgetown University in 1864. He served in the army as assistant surgeon of volunteers two years during the civil war, and afterward as superintendent of the Freedmans Hospital, Richmond, Va., and later of the Virginia Eastern State Hospital for the Insane, Williamsburg, for nine years. He came to Illinois in 1875 and settled in Chicago, and soon became an important figure in the medical life of the city. He was for many years connected with Rush Medical College, first as professor of materia medica and therapeutics, and later as professor of nervous and mental diseases, and also held for many years the chair of diseases of the nervous system in the Northwestern University Woman's Medical School and the Chicago Post-Graduate Medical School.

He was a member of the American Medical Association, American Neurological Association, American Electro-Therapeutic Association, National Association for the Study of Epilepsy, Mississippi Valley Medical Association and Chicago Physicians' Club, the American Medico-Psychological Association, and honorary member of the Moscow Society of Neurologists and Psychiatrists and one of the founders of the Senn Club, and had been several times a delegate to international medical congresses. He was a member of the attending staff of St. Joseph's, Cook County and Presbyterian Hospitals, and consulting physician to the Women's and Children's Hospital and Oakwood Sanitarium.

He was the author of a standard text-book on insanity, and of many monographs on nervous and mental diseases. He was given the honorary degree of A. M. by Wabash College, and that of LL. D. by Georgetown University, Kenyon College and St. Ignatius College.

He was in apparent good health until a week before his death, when he was seized wth cerebral apoplexy, causing paralysis of the left side, but apparently not affecting his mentality. He gradually failed physically, but retained consciousness until a few hours before his death, which occurred at 3.30 a. m., Monday, March 1.

I enjoyed the privilege of intimate acquaintanceship with Dr. Brower for upwards of the last twenty years of his life, meeting him frequently both socially and professionally. In his profession, both as a practitioner and teacher, he was active, earnest, hopeful and enthusiastic, and thus gained the confidence and admiration of his patients and students alike. He was always ready with a word of encouragement for the young practitioner, maintaining that the supply of thoroughly qualified physicians was not equal to the demand.

In the last fifteen years of his life he traveled extensively, not only visiting many foreign countries, but observing minutely many interesting characteristics, frequently supplementing his notes with original photographic views, thus preparing himself to deliver highly entertaining and instructive travel lectures, which upon invitation he from time to time delivered. This indeed was one of his favorite forms of diversion, and he developed such qualities in its exercise as to render it obvious that he might have succeeded in it as a vocation.

His uniform cheerfulness, genial and courtly manners, together with his sincerity and ready sympathy, bound him in strong ties of endearment to his associates. His last illness overtook him in the full exercise of all the activities upon which his character rests. Neither justice nor affection could demand for him a fairer ending.

SANGER BROWN.

## DR. WALTER ROBARTS GILLETTE.

Dr. Walter Robarts Gillette, a member of the consulting board of physicians of the Manhattan State Hospital, died on November 7, 1908, in his sixty-ninth year.

Dr. Gillette was born on January 16, 1840, at Philadelphia, Pennsylvania. He was graduated from Colgate University in 1861, from which he received the degrees of A. B. and A. M. He studied medicine at the College of Physicians and Surgeons in New York City, where he was graduated in 1863.

He was a member of the New York Academy of Medicine, of the Medical Society of the City of New York, of the American Medico-Psychological Association since 1899; was acting assistant surgeon during the Civil War, and for 13 years following surgeon to the New York Post Office; at one time he was attending physician, and later consulting physician, to Bellevue and St. Francis Hospitals, and for 30 years an official of the Mutual Life Insurance Company, 12 years of which time he was vice-president.

Early in the seventies Dr. Gillette became connected with the New York City Asylum for the Insane as consultant, being a life-long friend of the late Dr. A. E. Macdonald; his sound knowledge and widespread experience were gladly availed of. Although a busy man of affairs, he never hesitated to sacrifice self to respond quickly to the call of the hospital.

When the New York City Asylum for the Insane became the Manhattan State Hospital in 1896, he was chosen one of the board of consulting physicians and surgeons, to which his varied experience made a valuable addition, and continued his interest unabated in the welfare of the institution and the patients up to a recent period. His clinical knowledge and humane feelings eminently fitted him for the position of counsellor and consultant to this great hospital.

Personally, he was a delightful man, and was esteemed and beloved by all for his sterling worth and kind disposition, and the eulogies of his intimate friends and colleagues testify in the strongest manner to the hold he had on their affections. Dr.

Gillette was a man of highly cultivated intellect, conservative in his modes of thought, and was always ready to help medical and other charities; a courteous and kindly gentleman, much beloved and greatly esteemed by all who knew him.

A severe family affliction in the loss of his wife, to whom he was devotedly attached, was the beginning of a decline in health, which, under great anxiety, became too much debilitated to withstand the shock of a severe operation for cancer of the intestines, to which he succumbed 11 days later. His death is felt as a real personal loss by his professional friends, and by none more than those connected with the Manhattan State Hospital, who never sought his help or advice in vain.

The hospital counts itself fortunate in having as a member of its Board of Managers his daughter, Mrs. Grace Gillette Bird, who has been a member of the present board since it organization in 1905, and before that was a member of its Board of Managers.

WILLIAM MABON.

## DR. H. A. TOBEY.

Dr. Henry Archibald Tobey was born April 6, 1852, on a farm in Union County, Ohio. He was educated in the public schools, and at the Ohio Wesleyan University. He read medicine with Dr. Watt, of Kenton, Ohio. Later he entered the Miami Medical College of Cincinnati, from which he graduated with honors in 1875. He entered into partnership with Dr. Henry Conklin, of Sidney, Ohio, and practiced his profession as a general practitioner until 1877, when he accepted the appointment as assistant physician in the Columbus Asylum for Insane, then in charge of the illustrious Dr. Richard Gundry. He remained in the service under Dr. Gundry and Dr. Firestone until 1880, when he was elected Superintendent of the Dayton Asylum for Insane, being then but 28 years of age. In 1884 he decided to give up hospital work for private practice, and resigned his position and moved to Lima, Ohio, where he again took up the duties of a general practitioner, and was more than ordinarily successful, but when the new hospital at Toledo, Ohio, was ready for the reception of patients, the State authorities induced him to give up private practice in the interests of the public weal. In the opening of the Toledo State Hospital, his zeal, his enthusiasm, his organizing ability, soon brought this new hospital to the front, and made his reputation international. In 1891 the baleful influence of politics was felt in Ohio, and this great man was swept aside at the dictates of the spoilsman. In 1892 he was re-elected, and remained Superintendent of this great institution until failing health forced his retirement in 1906.

Dr. Tobey was married in 1881 to Minnie Conklin, of Sidney, Ohio. Three children, Helen, Alice, and Louise, survive him. Mrs. Tobey preceded him to the Great Beyond, and it was his worry and anxiety over her illness and death which precipitated the failure of his resistive powers, and from that time his health rapidly failed, until his work became burdensome and necessitated his retirement. He died suddenly at his summer camp in Canada, August 18, 1908.

Dr. Tobey was a most unusual man. He was big in body, mind, and soul. He was able to sort the wheat from the chaff, and reach a logical conclusion without circumlocution. His mind was active, strong, and given much to original thought. He was of an inventive bent, and many of his inventions tended to the betterment of the public institutions. The most successful, probably, were the hot-water heater and the steam trap, which are now used in many public hospitals. From a purely commercial viewpoint his gas meter, which was developed in 1891, proved most successful.

Dr. Tobey was a believer in the brotherhood of man and the Fatherhood of God. He was a close friend of "Golden-Rule" Mayor Sam Jones, of Toledo; counted Robert G. Ingersoll, Paul Lawrence Dunbar, and James A. Hearne among his intimates. He was a philanthropist, educating the poor, helping the needy; his benevolences were only limited by his means and opportunity, and were known to few beside the beneficiaries.

More than 20 years ago it was the writer's very great privilege to be associated with this remarkable man, this great hearted, lovable Tobey. For many months previous to the opening of the Toledo State Hospital I was engaged in assisting him prepare record books, arrange for the reception of patients, and in all the work incident to the launching of a great institution. Necessarily we were thrown together more closely than is ordinarily the case between superintendent and assistant. I learned to know him intimately, both professionally and socially, and I loved him. His tact, his industry, his ability to organize, all were of a superior order. I have never known a man who could with so little effort secure the entire confidence of patient and of employe alike. His patients loved him, his employes honored and respected him, and thoroughly believed in him. In his employ loyalty was the watchword. No man had more of the milk of human kindness than Dr. Tobey. Never had man a more promising future; the sun shone brightly, and he was standing on the pinnacle when the angel touched his elbow and beckoned him to follow. The State has lost a faithful citizen, and bows its head in sorrow, but only we, his intimate friends, can appreciate the loss of his kindly presence, the geniality of his personal magnetism. We have lost a dear friend and loving counsellor. The world is richer because

of his having lived in it. He never wilfully wounded the feelings of another, nor did what he considered an injustice to a fellow being. His motto was: "Look through the veneer to find the man, not through the man to find the defect."

He was large hearted and liberal in his alms-giving, but so unostentatious that few knew of his generosity, save those made richer by his benedictions. The sick, the poor, the afflicted, and all those whose lot is suffering and privation, have especial cause to mourn the loss of one whose whole life was devoted to their service and who deemed it his highest privilege to be able to mitigate their sorrows. He was, indeed, their benefactor. I do not know whether strict theology would include him in the list of those denominated orthodox Christians, but I do know that if there is a point between here and Heaven where some poor soul has halted and sent up the cry for help, there you will find Dr. Tobey pouring into his ears the words of cheer and comfort, and lending a helping hand. If by doing "unto one of the least of these" is to follow in the footsteps of the Master, then I know that Dr. Tobey was a Christian. He was a noble man, a true friend, a sweet soul.

"Life is a crucible; we are thrown into it and tried, and actual weight and value of a man are determined by the good he has accomplished and the place he holds in the hearts of his fellow mortals." Measured and weighed by these standards, Dr. Tobey was a full-grown man. We cannot believe he is dead. We are prone to believe that "living is death; dying is life; we are not what we appear to be. On this side of the grave we are exiles; on that, citizens; on this side, orphans; on that, children; on this side, captives; on that, free men; on this side, disguised; on that, disclosed and proclaimed sons of God."

HENRY C. EYMAN.

MASSILLON, OHIO, May 4, 1909.

## DR. H. E. BUCHAN.

Dr. Humphrey Ewing Buchan, assistant superintendent of the London Hospital for Insane, died October 17, 1907. He was born near Paris, Ontario, May 20, 1842. He graduated in arts and medicine in the University of Toronto, afterwards studying in London, England, and Glasgow.

After spending many years in private practice he was, in 1883, appointed assistant superintendent at the Toronto Hospital for Insane. He subsequently occupied a similar position in Rockwood Hospital for Insane, Kingston, and then removed to London Hospital for Insane (Ontario), in which institution he remained until his final illness overtook him.

Dr. Buchan was a popular physician and had many admirers in the service, and if he had commenced the study of psychiatry at an early period in his lifetime would no doubt, in due course, have been found at the head of an institution. He was a man of gentle nature and enjoyed the confidence and respect of all the patients with whom he came in contact.

C. K. Clarke.

## DR. CHARLES ERASTUS HICKEY.

Dr. C. E. Hickey, medical superintendent of the Hospital for the Insane at Cobourg, Ontario, died quite suddenly on the 19th September, 1908, at the age of 70 years.

He graduated from McGill University in 1866 and began practice in the town of Morrisburg, where he attained a high position in the professional, social, and public life of the district. For a number of years he represented the county of Dundas in the Dominion Parliament.

In 1905 he was appointed superintendent of the Hospital for the Insane, Cobourg, Ontario.

Dr. Hickey was widely read in his professional work, and was highly esteemed by his confrères for his ability, his sound judgment, and his true, manly spirit.

Edward Ryan.

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